District Court held patent claim 1 valid, infringed by Petitioner, and found no misuse. In addition, no fraud or inequitable conduct was found. The Sixth Circuit affirmed.

A. PATENT-IN-SUIT

The patent-in-suit relates to a metal treating process known by the generic name "soft nitriding," and by Respondents tradename Tufftride. The "soft nitriding" process was developed in Germany in the 1950's, and is a process for treating metal to improve its wear and fatigue properties. In its early development in the 1950's, the process was carried out by immersing a metal workpiece in a molten salt bath contained in an iron pot. The bath was maintained at a temperature of about 570° C, and the constituents of the bath included both cyanate (CNO) and cyanide (CN) salts. At that stage in the development, it was essential that the cyanate level of the bath be maintained above 30%.

Cyanate is the active ingredient of the molten bath, and during the process, the cyanate decomposes to form atomic or nascent nitrogen which reacts with the metal workpiece to improve its properties. Since the cyanate continually decomposes during the process, it was, of course, necessary to somehow replenish the cyanate in the molten bath.

The patent-in-suit is directed to an improvement of the "soft nitriding" process wherein an oxidizing gas such as air is continuously bubbled through the molten bath to replenish the cyanate lost during the process. This step may be referred to as aeration. The oxidizing gas reacts with cyanide salts in the molten bath to form cyanate at a rate sufficient to maintain the proper cyanate level [2CN (cyanide) + O_2 (oxygen) = 2CNO (cyanate)]. However, a problem did arise with aeration in that an undesirable

sludge was formed in the pot particularly when the cyanate level of the bath exceeded 40%. The patent-in-suit states that it is critical to the successful practicing of the process to maintain the cyanate level of the bath between "25 and 40% (828 J.A.).

Later, Respondents found that the sludge problem was considerably alleviated by substituting a titanium pot for the iron pot formerly used in the "soft nitriding" process, and that with a titanium pot, the cyanate level of the bath should be maintained between 42 and 50%. Respondents obtained a separate patent for this improvement (J.A. 1033), and Respondents now operate the Tufftride process with cyanate levels of 42 to 50% (J.A. 1039). Petitioner has *not* been charged with infringement of this later patent.

B. ACCUSED PROCESS

The accused process, practiced under the tradename Cynatride, resulted from a development of the Petitioner who discovered and patented that it would be best to operate aerated "soft nitriding" at a cyanate level of 48-50% and above with the molten salts contained in a *stainless steel pot* rather than the iron pot of the patent-in-suit or the titanium pot of the current Tufftride process.

C. INFRINGEMENT

Certiorari is sought on the issue of infringement because the accused process was held to infringe claim 1 of the patent-in-suit even though that claim contains an express limitation, inserted by amendment, in response to a rejection on prior art, requiring that the cyanate level in the patented process be between about 25 and 40%. As originally filed, application claim 1, a claim that is a model of clarity and precision, was directed to the point of

novelty which the Sixth Circuit in 1971 found to be a patentable addition to the prior art "soft nitriding" process. This advance consisted of aerating the "soft nitriding" process[1] and application claim 1 was literally readable on any aerated "soft nitriding" process including Petitioner's. Hence, had application claim 1 been allowed by the Patent Office, the issue of infringement would not have been raised below. Application claim 1 read as follows:

> 1. A method of treating metals having a surface adapted for nitriding which comprises immersing such metals in a fused salt bath containing alkaline metal cyanide and alkali metal cyanate maintained at a temperature between 500 to 600°C while passing a finely divided oxidizing gas through said fused salt bath.

Application claim 1 was rejected by the examiner on the basis of a British patent which disclosed a cyanate molten salt bath with ammonia gas bubbling through the bath. The examiner took the position that ammonia and air were functional equivalents when bubbled through a molten salt bath (J.A. 965-966). Instead of asserting that the examiner was wrong because ammonia and air were not functional equivalents, Respondents rewrote application claim 1 as application claim 12 (patent claim 1) as follows:

> 12. A process comprising immersing a metal workpiece in a molten alkaline metal salt bath comprising *between about 25 and 40% cyanate,* at least

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[1] The holding that the obvious expedient of aeration was patentable was the result of the clearly erroneous finding that aeration surprisingly led to uniformity of result. Uniformity in fact was not achieved until the titanium pot was introduced (J.A. 208-209; 1033-1036). Indeed, at trial the Court stated "The testimony was the iron pot was erratic and produced erratic results." (J.A. 270).

> about 50% cyanide, the remainder being substantially carbonate, the said bath being free of sulfur, selenium and tellurium, while aerating the bath with an oxygen-containing gas introduced in well distributed fine bubbles. (emphasis supplied).

After repeated references to the criticality of the 25-40% cyanate range during the prosecution,[2] the above claim was allowed and it was this claim that was found valid and infringed below.

After the patent-in-suit was granted, Petitioner retained experienced patent counsel to study the patent-in-suit and advise as to the scope of Respondents' claimed monopoly. At that time, counsel advised that a process operating substantially above the 40% cyanate limit of the patent would not infringe, since Respondents had deliberately inserted by amendment the "about 25-40% cyanate" limitation into patent claim 1 and were thus bound by this limitation. This advice was also tendered by Petitioner's litigation counsel. However, the Sixth Circuit found that the "about 25-40% cyanate" limitation inserted into patent claim 1 could be ignored basing its view on the startling finding that the limitation was inserted "to call the examiner's attention to the differences in the process and the prior art generally rather than to distinguish the cited art in terms of patentability," 440 F.2d at 83, 10a. Further, the Court felt free to ignore this limitation even though it admitted

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[2] Indeed, in the patent itself amongst other assertions of criticality, the statement is made as follows: "The critically improved range of 25-40%, and preferably 30 to 40% cyanate content of the bath . . ." (828 J.A., Col. 2, lines 40-41). Further Respondents' counsel admitted that the examiner was interested in the claimed cyanate level rather than aeration (J.A. 80-81).

that Respondents argued in the Patent Office that the range of 25-40% cyanate was critical.[3]

The Sixth Circuit did not stop at this point, but went on to characterize Petitioner's reliance on the language of patent claim 1 as piracy, 9a. After complaint by Petitioner's counsel that it was outrageous to brand a businessman who relied on patent claims and particularly upon a limitation inserted into a claim by amendment as a pirate, the Sixth Circuit withdrew its characterization of Petitioner's acts as piracy, but nevertheless reaffirmed its view that the "about 25-40% cyanate" limitation must be disregarded, 16a. Certiorari should be granted to reassert the primacy of patent claims as the measure of the patent monopoly and to reiterate this Court's view that a limitation inserted into a claim by amendment may not be disregarded, *Exhibit Supply Co.* v. *Ace Patent Corp.*, 315 U. S. 126, 136-137.

D. MISUSE OF PATENT-IN-SUIT

The commercial exploitation of the Tufftride process by the Respondents is believed to constitute patent misuse because the Respondents' marketing practices with regard to the aerated "soft nitriding" process are designed powerfully to assist Respondents in selling conventional unpatented cyanide and cyanate salts used in the patented process. Indeed, all users of aerated "soft nitriding" in the United States, with the exception of Petitioner, buy

[3] There is some suggestion in the Court's opinion that "about 25-40% cyanate" also literally reads on the accused process. The accused process has frequently been operated at levels above 50% cyanate. If there is literal readability the English language has lost all meaning and claims interpreted in this fashion would be so indefinite that they could not serve to inform the public as to precisely what they can and what they cannot do, 35 U.S.C. § 112. Hence, to the extent that the Sixth Circuit may have found literal readability, summary reversal is indicated.

the conventional unpatented cyanide and cyanate salts from Respondents.

1. CAPTIVE SHOPS

Respondents exploit their process patent in the United States in different ways with respect to the two classes of users, captive shops and heat treaters. First, captive shops (companies which use the Tufftride process in their own plants solely on their own products) are not granted written process licenses to practice the aerated "soft nitriding" process under the patent-in-suit. Indeed, Respondents have announced that no written patent licenses may be obtained (J.A. 222-224; 1066). However, unpatented conventional cyanide and cyanate salts for use in the patented process are made available to captive shops by Respondents. All users of the Tufftride process buy unpatented salts from Respondents except Petitioner, and all users of the aerated "soft nitriding" process not purchasing unpatented salts have been sued for infringement of the patent-in-suit,[4] The Courts below believed that there was

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[4] Indeed, even a manufacturer's representative was sued for patent infringement because he was believed to be selling the same unpatented salts as are sold by Respondents. With regard to this incident Respondent Kolene's president testified as follows:

> Q. Do you ever recall ever suing a salt manufacturer? A. Yes. I recall a suit against — I believe a manufacturer's representative. * * *
>
> Q. Could you explain to the Court why you sued John Shepherd? A. I understood that he was furnishing the exact composition that was covered, as I assumed, by our patent, and on the advice of counsel, suit was instituted.
>
> * * *
>
> Q. But you did sue him? A. We did sue him.
>
> Q. *Because he was selling salts?* A. *Of course, because I was told he was selling salts, and afterwards, under oath, he stated he was not.*
>
> Q. Now, if another manufacturer other than John Shepherd began manufacturing "Tufftride" salts, would it be your policy to sue him? A. Well, I would determine that at that time. (emphasis supplied) (J.A. 217-218)

nothing coercive in adopting the commercial tactic of making it abundantly clear that no written royalty bearing process licenses are available and then furnishing unpatented salts for use in the patented process. Of course, as long as unpatented cyanide and cyanate salts are purchased from Respondents the purchaser has an implied license under the patent-in-suit. Such commercial tactics have been summarily condemned by this Court and those holdings should be reaffirmed here. *B. B. Chemical Co.* v. *Ellis*, 314 U. S. 495; *Leitch Mfg. Co.* v. *Barber*, 302 U. S. 458; cf. *F. T. C.* v. *Texaco, Inc.*, 393 U. S. 223.

2. HEAT TREATERS

With respect to the so-called heat treaters who carry out the Tufftride process on parts owned by other concerns, a different method of commercial exploitation is followed. Respondents grant heat treaters written licenses and use a standard form license (J.A. 1083-1085). This written license grants to the heat treater the right to use the mark Tufftride, and more significantly licenses the heat treater under all patents owned by either of the Respondents relating to the Tufftride process.[5] This license contains a provision forcing the licensed heat treater to purchase all unpatented salts used in the patented process from Respondents. The District Court found that the tying

[5] The standard heat treater license contains the following paragraph (J.A. 1083):

> Any improvements, patentable or not patentable, developed by METAL TREATER in the process or apparatus or materials used for the TUFFTRIDE process shall be exclusively assigned and conveyed by METAL TREATER to DEGUSSA *and DEGUSSA patents or rights of use thereon or thereof, and any other patents or rights of use licensed to KOLENE by DEGUSSA or owned by KOLENE on the TUFFTRIDE process*, apparatus, or materials *will be automatically licensed to METAL TREATER hereunder.* (emphasis supplied)

clause was based not on the patent but rather on the trademark Tufftride and hence the tying clause did not amount to patent misuse. The Sixth Circuit agreed and bolstered its holding by pointing out that a non-standard license which deleted the offensive tying provision was offered to the Petitioner. However, this offer was by a letter dated August 20, 1968 which was shortly before trial, and prior to that time the only license offered to Petitioner was the standard license containing, as do all such licenses, the offensive tying provision. This offer was on a take-it-or-leave-it basis.[6]

If owners of process patents can use the power of their patent to control commercialization of the patented process and, when licensing the patent also license a name for the process and include in the combined license an unlawful tying provision and in this manner escape patent misuse, then the tying of unpatented materials to the licensing of process patents will suddenly become lawful. This Court

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[6] The testimony of Respondent Kolene's president on its licensing policy was as follows:

> MR. CULLEN: The licensee may purchase his salts from anyone else.
>
> THE WITNESS: No. If he signs the license contract, he agrees to buy the salts from Kolene.
>
> MR. CULLEN: Now the question obviously is: Suppose he doesn't want to sign the standard license contract? Then you will not give him a license?
>
> THE WITNESS: *He will not be a licensee* (J. A. 551-552).

As for Petitioner, the Pre-Trial Order specifically states the following:

> It is agreed that up to August 20, 1968, *the defendant was offered only a standard license and was told that the terms of that license were not negotiable.* Subsequently a non-standard license was offered by letter dated August 20, 1968. (J.A. 20) (emphasis supplied)

should grant certiorari and assert that a tying clause in a license granting rights under a patent-in-suit is sufficiently related to that patent to call into play the doctrine of patent misuse if that patent covers a process in connection with which an unlawful tying arrangement is utilized.[7]

VI. REASONS FOR GRANTING THE WRIT

This Court has not dealt with the question of infringement since the passage of the 1952 Patent Act. Meanwhile, since its passage, courts have adopted a wide variety of different standards with respect to both the doctrine of equivalents and the extent to which resort to equivalents is barred by file wrapper estoppel. Thus, in many instances as exemplified by the opinions below, patent claims are failing to serve their primary function of informing the public of what they can and cannot do. Indeed, they are a trap for the unwary since businessmen cannot rely on the words of claims so as to be put on notice as to the scope of the monopoly granted. Instead, even with respect to limitations which are inserted by amendment, business-

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[7] There was some suggestion in the opinion of Judge Smith that the tying provision was justified. This suggestion was not affirmed by the Sixth Circuit perhaps because Respondent Kolene's president candidly admitted that the tying provision was employed because he likes to eat. He expressed his hunger as follows:

> Q. Now, do you know of any reason why you could not furnish your specifications for the salts that are put in that you sell? A. Yes. *The principal reason is I have a good appetite and I like to eat.*
>
> Q. Perhaps you could elaborate on that?
>
> A. Our whole business is in salts. This is how we make our livelihood, *so to furnish the specification so that they may purchase salt from other people would simply meant that we couldn't continue to exist.* (J.A. 230) (emphasis supplied).

men must bear in mind that an Appellate Court several years later may decide to disregard that very limitation. This result is surprising since this Court held prior to the 1952 Patent Act that any limitation introduced into a claim is binding upon the patentee and such a claim limitation cannot be expanded by the doctrine of equivalents. *Exhibit Supply Co.* v. *Ace Patent Corp.*, 315 U. S. 126, 136, 137. However, this holding has not been rigorously followed in many cases and certainly was not followed below.

For example, the Fifth Circuit has stated, albeit in dicta, that the only abandonment by amendment that may occur in the Patent Office is where the prior art forced such an abandonment. *Hunt Tool Co.* v. *Lawrnece*, 242 F.2d 347, 353-354 (5th Cir. 1957).[8] This approach eliminates the doctrine of file wrapper estoppel completely since an estoppel is not required to prevent expansion of a claim by the doctrine of equivalents if the prior art itself precludes such expansion. Nevertheless, without expressly citing *Hunt*, the Courts below followed it.[9] But the purpose of

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[8] The Court stated in part:

> Also, since the patent examiner's objection was with reference to the prior art, appellants are protected by file wrapper estoppel only if they can show that their alleged infringement is in an area to which the prior art could possibly have been thought to extend so as to make it impossible to make valid claims there, for there is no reason to presume that applicant made a disclaimer broader than necessary to the actual challenge to his claim, . . . 242 F.2d at 354.

[9] For example, Judge Smith stated:

> But it is significant, at this point to note that the examiner did not reject on the basis that the prior art showed a process over which applicant distinguished solely on the matter of the maximum level of cyanate, which is the bone of contention at this point. Had he done so, a substantial question might arise, but such was not the case. 307 F. Supp. at 1259, 34a.

patent claims is to notify the public of the precise scope of the patent monopoly granted, 35 U. S. C. § 112. Nevertheless, in the Sixth Circuit, as well as in other Circuits that have refused to strictly construe limitations added by amendment, businessmen must go to the trouble and expense of developing all prior art when studying each patent claim and then make an educated guess as to whether in view of that art an Appellate Court will expand the scope of the claim beyond its literal meaning even when the limitation in question was introduced into the claim by amendment. The resultant uncertainty creates a great potential for mischief on the part of large and powerful patentees.

The doctrine of equivalents has not, however, run rampant in all circuits. There are decisions where the doctrine has received a hostile reception because if routinely applied it completely subverts the policy of requiring an inventor to particularly and distinctly claim his invention. For example, Judge Blackmun, now Mr. Justice Blackmun, when writing for the Eighth Circuit in the case of *Parmelee Pharmaceutical Co.* v. *Zinc,* 285 F.2d 465, 471 (8th Cir. 1961), stated that the doctrine of equivalents should be applied only when the claiming burden upon the patentee is so inequitable as to merit some form of extraordinary relief. However, unfortunately, the doctrine is routinely applied in lower courts and what is worse, the doctrine of file wrapper estoppel has not served as a bulwark against its abuse.[10]

[10] For example, in *Unilectric, Inc.* v. *Holwin Corp.*, 243 F.2d, 393, 399 (7th Cir. 1957) the Court found no estoppel because it classified the cancellation of a broad claim as "voluntary". On the other hand, the Court in *Carter Products Inc.* v. *Colgate Palmolive Co.*, 269 F. 2d 299 (4th Cir. 1959) appears to have strictly followed the decisions of this Court. Nevertheless, one has only to briefly

Indeed, file wrapper estoppel is a trap for the unwary. In most cases its existence is a myth perpetuated by the language of this Court's decisions. This is so because instead of following this Court's direction to strictly construe a limitation inserted into a claim by amendment, Courts such as the Courts below often indulge in a search for what the applicant in fact meant to disclaim in the Patent Office. It is not then surprising that, when an Appellate Court determines that an invention is broader than the claims in the patent, the same Court finds as a fact that no disclaimer of the broader invention occurred in the Patent Office.

For example, the Sixth Circuit determined that Petitioner's 50% cyanate process was not disclaimed below when Respondents deliberately inserted the limitation "about 25-40% cyanate" even though Respondents called the 25-40% range "critical." In fact, there was no disclaimer according to the Sixth Circuit because in that Court's view, the 25-40% limitation was unnecessary and added nothing to the patentability of abandoned application claim 1. Hence, no file wrapper estoppel. But in *Exhibit Supply Co.* v. *Ace Patent Corp.*, 315 U. S. 120, 136-137, this Court stated that a limitation added by amend must be strictly construed even if the examiner was wrong in rejecting the claim as filed.

Other than the case at bar, perhaps the most striking recent example of the failure of the courts to follow this

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look at the annotation to 35 U.S.C.A. § 112 to learn that Mr. Justice Black was correct when he stated when dissenting in *Graver Tank* v. *Linde*, 339 U.S. 605 that, "One need not be a prophet to suggest that today's rhapsody on the virtue of the doctrine of equivalents will . . . make enlargement of patent claims the rule rather than the exception." 339 U.S. at 616.

Court's decisions on file wrapper estoppel is found in the two opinions of the First Circuit in *Borg-Warner Corp. v. Paragon Gear Works*, 146 U. S. P. Q. 507 (1st Cir. 1965); 355 F.2d 400 (1st Cir. 1965). In its first opinion the Court applied the doctrine of file wrapper estoppel to a limitation introduced by amendment and found no infringement even though the accused structure was an equivalent, 146 U. S. P. Q. 507. However, this opinion was withdrawn and the Court of Appeals then changed its mind and decided that really the limitation which was inserted into the claims in the Patent Office was not in fact intended to limit the scope of the patent monopoly and hence could be disregarded, 355 F.2d 400.

Therefore, in view of the varying approaches to infringement followed by the various circuits, and since this Court has not dealt in an opinion with the issue of patent infringement since the enactment of the 1952 Patent Act, and further because of the manifest injustice to Petitioner if the decision below is left standing, the case at bar is an appropriate vehicle for this Court to reconsider the law of patent infringement and reassert the primacy of claims as defining the patent monopoly. This reexamination is particularly appropriate in view of the following statement of Mr. Justice White writing just last term for a unanimous Court in *Blonder-Tongue* v. *Univ. of Illinois Foundation*, 91 S. Ct. 1434; 28 L. Ed. 2d 788:

> When these judicial developments are considered in the light of our consistent view—last presented in *Lear, Inc. v. Adkins*—that the holder of a patent should not be insulated from the assertion of defenses and thus allowed to exact royalties for the use of an idea that is not in fact patentable or *that*

> *is beyond the scope of the patent monopoly granted,* it is apparent that the uncritical acceptance of the principal of mutuality of estoppel expressed in *Triplett* v. *Lowell* is today out of place. 91 S.Ct. at 1434, 28 L.Ed. 2d at 811 (emphasis supplied).

The uncritical and routine application of the doctrine of equivalents is equally out of place and should be replaced by an approach where the doctrine is invoked only in rare and unusual circumstances.[11] Further, this Court should reaffirm that a claim limitation inserted by an amendment cannot be expanded by the doctrine of equivalents. Such a ruling would clearly require reversal of the decision below, a reversal which would reassert the primacy of claims and reaffirm that "businessmen are certainly entitled to know when they are committing an infringement." *Aro Mfg. Co.* v. *Convertible Top Replacement Co.*, 365 U.S. 336, 358 (Black, J., concurring).

Turning to the question of misuse, this Court should grant certiorari on the issue of misuse in order to reaffirm its historic view that patents cannot be used to monopolize unpatented components, *Mercoid* v. *Mid-Continent Inv. Co., Inc.*, 320 U.S. 661; *Blonder-Tongue* v. *Univ. of Illinois Foundation*, 91 S. Ct. 1434, 1450; 28 L. Ed. 2d 788, 808. Thus, the practices of the Respondents with respect to captive shops are an unlawful form of tying since this Court has held that a patentee who owns a process patent may not grant implied process licenses to users of unpatented products used in the patented process by virtue of selling such unpatented products to users of the patented

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[11] The basis for such a rule is clearly set forth in the opinion of Judge Blackmun, now Mr. Justice Blackmun, writing for the Eight Circuit in *Parmelee Pharmaceutical Co.* v. *Zinc*, 285 F. 2d 465 (8th Cir. 1961).

process while at the same time enforcing the patent and refusing to grant written process licenses. *B. B. Chemical Co.* v. *Ellis*, 314 U. S. 495; *Leitch Mfg.* v. *Barber*, 302 U. S. 458. Now this tactic is lawful, unless certiorari is granted, at least in the important industrial states which make up the Sixth Circuit.

Next, this Court should stop in the incipiency the technique approved by the Sixth Circuit for using unlawful tying provisions in the licensing of process patents, i.e. the technique of licensing a trademark along with the patent and then asserting when challenged in a patent infringement suit that it is the trademark that forms the basis for the tying provision rather than the patent.[12] Indeed, of course, this is absurd since when a process is dominated by a patent it is the market power of the patent which is important and which the licensee is obtaining relief from when he accepts a license. As might be expected, Petitioner has had no difficulty competing with Respondents' licensee in the Detroit area even though Petitioner is not using the trademark Tufftride. However, if this Court refuses to grant certiorari and reverse, Petitioner will be out of business. Similarly all heat treaters licensed by Respondents would be out of business if their patent licenses were lost, but each such licensee could continue effectively in business after losing the right to use the mark Tufftride in connection with their use of the patented process. Certainly the patent-in-suit is powerfully con-

[12] It may also be necessary to offer to the infringer just prior to trial a license without the unlawful tying provision. Respondents adopted this tactic after insisting for years during the pendency of the suit that settlement was possible only if Petitioner would sign the standard license which included the offensive tying provision. (J.A. 20).

nected to the illegal tying provision. Hence, the decision below would appear to conflict with the recent decision of the Second Circuit in *Ansul Co.* v. *Uniroyal, Inc.*,.... F.2d ..., 169 U. S. P. Q. 759, 763-765 (2nd Cir. 1971) decided April 29, 1971 in regard to the necessary relationship between the patent and the unlawful practice before a misuse of the patent is found. In addition, it appears to be clearly in conflict with the principles set out in *Switzer Bros.* v. *Lochlin*, 297 F.2d 39, 46 (7th Cir. 1961) where the Seventh Circuit rejected a trademark defense substantially identical to the trademark defense accepted by the Courts below.

VII. CONCLUSION

In view of the above, certiorari should be granted on the issues of infringement and misuse.

Respectfully submitted,

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No. 20107

UNITED STATES COURT OF APPEALS FOR THE SIXTH CIRCUIT

KOLENE CORPORATION, AND DEUTSCHE GOLD-UND-SILBER SCHEIDEANSTALT VORMALS ROESSLER,

Plaintiffs-Appellees,

v.

MOTOR CITY METAL TREATING, INC.,

Defendant-Appellant.

APPEAL from the United States District Court for the Eastern District of Michigan, Southern Division.

Decided and Filed March 9, 1971.

Before PHILLIPS, Chief Judge, and PECK and BROOKS, Circuit Judges.

PHILLIPS, Chief Judge. This is an appeal from the order of the District Court holding a patent valid and infringed. We affirm.

For an extensive discussion of the facts of the case reference is made to the opinion of District Judge Talbot Smith, reported at 307 F.Supp. 1251 (E.D. Mich.). A summary of pertinent facts will be stated in this opinion to the extent necessary to dispose of the issues presented on appeal.

The Prior Art

The patent in suit, U.S. Letters Patent No. 3,022,204, concerns the treatment of metals to improve their strength and wear properties. At the time of the invention both inventors were employees of Deutsche Gold-und-Silber Scheideanstalt Vormals Roessler (hereinafter referred to by its tradename "Degussa"), a German corporation.

Kolene is the exclusive licensee of the patent in the United States.

In the early 1950's, the treatment of metals to upgrade their strength and wear properties was carried out by two distinct conventional nitriding processes, "gas nitriding" and "liquid nitriding."

"Gas nitriding" is carried out by placing the steel part to be treated in a chamber at a temperature of about 520° C. and then passing into the chamber a current of ammonia gas for at least 24 hours.

"Liquid nitriding" is practiced by placing the steel part to be treated in an aged salt bath containing a cyanide salt at a temperature of 565° C. One of the effects of the aging is that, at the surface of the bath, a portion of the cyanide salt reacts with oxygen in the air to form cyanate, 2CN (cyanide) + O_2 (oxygen) = 2CNO (cynate). This surface aeration creates a bath having 5-15% cyanate.

Both these processes operated to harden the surface of the treated part but they had serious side effects, one of which was causing the part to distort and become very brittle. The processes also took considerable time, were extremely expensive, and were limited to specific applications. They could not be used to nitride low carbon steels.

Around 1954 Dr. Muller, a metallurgist employed by Degussa, discovered that by operating a liquid nitriding process with a bath having a relatively high cyanate content (ie., roughly 30%), the wear resistance of a treated workpiece was substantially improved without the previously attending brittleness. At least by 1958 Dr. Muller had discovered that a 30 per cent cyanate bath process also remarkably increased the fatigue resistance of low carbon steels. Both these discoveries became part of the prior art

with respect to the patent in suit by virtue of Dr. Muller's publications acclaiming their merits. To describe the newly discovered process, Dr. Muller coined the phrase "soft nitriding," which contrasted the new process with the brittleness of workpieces treated by the old liquid and gas nitriding processes.

The original "soft nitriding" process saw considerable exploitation in Europe, but after some time it was found to have one fatal drawback—the lack of uniformity. As a result of this deficiency, use of the process was discontinued. Thus, as found by the District Judge, the original "soft nitriding" process was a commercial failure.

The Invention

In February of 1959, Dr. Muller, and Carl Albrecht, another Degussa technical employee, jointly conceived the idea of bubbling air up through the salt bath (a technique referred to as "sub-surface aeration" or simply "aeration"). Aeration of the 30 per cent cyanate bath proved to be the key to uniformity. Moreover, for some as yet unexplained reason, the quality of the process was improved. This improved process was also referred to as "soft nitriding" but was introduced in this country by Kolene under the servicemark "TUFFTRIDE."

The Prosecution History of the Patent

In October 1959, a patent application (Serial No. 844,382) was filed in the U. S. Patent Office in the name of Dr. Muller. This application was directed to the non-aerated process which employed a bath having at least 30 per cent cyanate. This application was abandoned in 1962.

In the meantime, on March 25, 1960, an application (Serial No. 17,541) had been filed on the process of the present invention. Claim 1 of this application read:

"1. A method of treating metals having a surface adapted for nitriding which comprises immersing such metals in a fused salt bath containing alkali metal cyanide and alkali metal cyanate maintained at a temperature between 500 to 600° C while passing a finely divided oxidizing gas through said fused salt bath."

This claim was rejected on the basis of a British patent disclosing a process for treating metals which included a bath having up to 15 per cent cyanate and with an ammonia gas bubbling up through the bath. A second rejection was made on the basis of the British patent in view of Dr. Muller's earlier U. S. patent No. 2,927,875, which disclosed the non-aerated bath of 30-40 per cent cyanate.

In response to this rejection, applicants' attorney canceled claim 1 and substituted the following:

"12. A process comprising immersing a metal workpiece in a molten alkali metal salt bath comprising between about 25 and 40% cyanate, at least about 50% cyanide, the remainder being substantially carbonate, the said bath being free of sulfur, selenium and tellurium, while aerating the bath with an oxygen-containing gas introduced in well-distributed fine bubbles."

After a number of conferences with the Examiner and persuasive written argument (which we will consider later in this opinion), claim 12 was allowed. Claim 12 was then transferred to an application filed March 20, 1961, Serial No. 97,060, which application materialized into the patent in suit. Claim 12 was numbered as claim 1 in the latter application and in the patent, and that claim is the center of the present controversy.

The Alleged Infringement

Motor City, the appellant, is something of a spin-off of Commercial Steel Treating Corporation, another Detroit heat treating establishment which worked with Kolene in exploiting the invention in the early days of "TUFFTRIDING." Mr. Miel, the present controlling stockholder of Motor City, was president of Commercial at that time. When Commercial and Kolene had a parting of the way, Miel left Commercial and established Motor City for the purpose of heat treating metals under a process called "CYNATRIDE." The "CYNATRIDING" process of Motor City involves immersing a workpiece in an aerated salt bath having something between 46 and 50 per cent cyanate.

No improvement in the process results from using a bath with 46-50 per cent cyanate as compared to a bath with cyanate in the exact range of 35-40 per cent. This per centage of cyanate was selected, according to Miel, on advice of counsel to avoid infringement of the patent.

In response to the instant suit, Motor City defends on the grounds that: (1) The patent is invalid, (2) the accused process does not infringe, (3) the patent is unenforceable because of fraud on the Patent Office in its procurement, and (4) the patent is unenforceable because of plaintiff's misuse. We shall consider each of these defenses separately since the pertinent considerations differ for each.

Invalidity

Motor City admits that the patented process is new and novel, but contends that is is obvious within the meaning of that term in 35 U.S.C. § 103.

The question of "obviousness" in determining patent

validity is a mixed question of both fact and law. *Kaiser Industries* v. *McLouth Steel Corp.*, 400 F.2d 36, 41 (6th Cir.); *National Filters, Inc.* v. *Research Products Corp.*, 384 F.2d 516 (5th Cir.); *Hensley Equipment Co.* v. *Esco Corp.*, 375 F.2d 432 ((9th Cir.). In ruling on the question the Supreme Court said:

> "(1) Under Section 103, the scope and content of the prior art are to be determined;
>
> "(2) Differences between the prior art and the claims at issue are to be ascertained;
>
> (3) And the level of ordinary skill in the pertinent art resolved.
>
> "(4) Against this background, the obviousness or non-obviousness of the subject matter is determined.
>
> "(5) Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented. As indicia of obviousness or non-obviousness, these inquiries may have relevancy." [Note: Clauses separated and numbered for convenience.] *Graham* v. *John Deere Co.*, 383 U. S. 1, 17.

When the District Court determines items numbered 1, 2 and 3, it makes findings of fact which are binding on appeal unless the findings are clearly erroneous. Rule 52(a), Fed. R. Civ. P. It is the ultimate determination of the trial judge (item number 4 above) which is a conclusion of law with which this Court may disagree based on the established findings of fact. See *Monroe Auto Equipment Co.* v.

Heckethorn Mfg. & Sup. Co., 332 F.2d 406 (6th Cir.), cert. denied, 379 U. S. 888.

We will not review Judge Smith's findings of fact except to point out that he found that nothing in the prior art suggests aeration of the 30 per cent cyanate bath. We are in complete agreement with that finding and his conclusion that the invention was not obvious at the time it was made.

We note that the known reaction of cyanide with oxygen to produce cyanate and the known beneficial effect of a liquid nitriding process operated with a 30 per cent cyanate bath would not have made the claimed invention obvious to one skilled in the heat treating art at the time the invention was made. When the effect on the process of the 30 per cent cyanate bath became known, the art would suggest that any aging or oxidation would no longer be necessary, since the purpose and effect of aging was to raise the cyanate level of the bath to about 15 per cent. Assuredly nothing in the prior art would suggest aeration of the 30 per cent cyanate bath.

Infringement

The District Court found that the accused process infringed Claim 1 of the patent in suit. Motor City alleges that this was error for two reasons. First, it says that the accused process does not come within the scope of protection of the patent because the claim does not literally "read on" Motor City's process. Second, while apparently admitting that the accused process is the full equivalent of the patented process, Motor City contends that the plaintiffs are estopped, by virtue of the doctrine of file wrapper estoppel, from enforcing this patent against the

accused process. We conclude that both these points of alleged error are without merit.

On the question concerning the literal reading of the claim, we first emphasize that the patent is directed to a process and that the claim specifies the steps of immersing a workpiece in a bath while aerating the bath. Motor City's process employs both these steps. We do not intend to imply that the ingedients of the bath are not important. The process is ineffective with a bath having less than 25 per cent cyanate. In that sense, the percentage of cyanate is critical—as was pointed out during prosecution before the Patent Office by applicants' attorneys.

The limits of the claimed percentages were established on the basis of different considerations. The lower limit was operational (*i.e.*, the process would not achieve the desired result below about 25 per cent), and the upper limit was practical (*i.e.*, because of a sludge problem it was not economical to operate above about 40 per cent). When the sludge problem was solved and it became feasible to operate at 46-50 per cent cyanate, we agree that for practical purposes this was within the range defined by the claim. We therefore agree with the District Court that the claim literally reads on the accused process. Our decision on this point is also affected by the fact that Motor City chose the 46-50 per cent cyanate operating level for no other purpose except to avoid infringement of the patent.

Motor City contends that it is protected by the doctrine of "legitimate design around," which recognizes the right of one to look at a patent, make a good faith determination of its scope of protection and then design a process or product that skirts that protection. We recognize that doc-

trine, but also recognize its underlying purpose—namely to encourage research which will develop new ways of doing the same thing. In this case, Motor City has done nothing new. It has done nothing more than merely appropriate the patentees' idea. This court does not condone that type of piracy.

Since we agree with the District Court that the accused process infringes by a literal reading of the claim, according to the statement of the Supreme Court in *Graver Tank & Mfg. Co.* v. *Linde Air Products Co.*, 339 U. S. 605, 607, "that is the end of it." However, since Motor City presses so vigorously the doctrine of file wrapper estoppel, we consider the contention briefly. The doctrine of file wrapper estoppel can be involved only after infringement has been shown through application of the doctrine of equivalents. Since the accused process requires the same steps and operates in the same manner, to achieve the same results as the patented process, there is no question that it is an infringement under the doctrine of equivalents. The only question then is whether the owners of the patent are estopped, under the doctrine of file wrapper estoppel, from enforcing the patent against the accused process. This will be determined by a consideration of the events that transpired in the Patent Office.

We have already noted that applicants' attorneys emphasized the lower percentage of cyanate in the bath as critical. However, as was recognized by the District Court, the percentage of cyanate was critical to the process, not to the patentability of applicants' invention. Applicants discovered the beneficial effects on the process of aeration of the bath. This was what they represented as their contribution to the art originally and they maintained that

position throughout the prosecution before the Patent Office. By adding to the claim the operable percentage limits applicants did not disclaim those percentages that were equivalent thereto. We specifically note that in his remarks to the rejection of claim 1 on the basis of the British Patent, applicants' attorney took the position that the reference was "inapplicable even to claims 1 and 2 in their original scope." A review of the entire prosecution history of this patent convinces us that protection of the *aerated* process was applicants' primary concern, and the references to the percentages of cyanate in the bath as being critical were intended to define an operative process, and to call the Examiner's attention to the differences in the process and the prior art generally rather than to distinguished the cited prior art in terms of patentability. We therefore agree with the District Court that no file wrapper estoppel exists and that the accused process infringes by application of the doctrine of equivalents.

Alleged Fraud on the Patent Office

The District Court found that there was no evidence of fraud since Motor City had only referred to the file wrapper in support of this defense. While we recognize that in some cases the file wrapper may be sufficient evidence of the defense of unenforceability because of fraud in procurement of the patent, that situation does not exist in this case.

The District Court found that the patent application itself disclosed the prior art 30 per cent cyanate process, 307 F.Supp. at 1262, and that finding is not clearly erroneous, Rule 52(a), Fed. R. Civ. P.

We agree with the District Court that the file wrapper is replete with instances where the Examiner was advised

that the 30 per cent cyanate bath was prior art. The Examiner must be given credit for the ability to recognize the inference that seemed unquestionably clear to the District Court and is equally clear to this Court.

In a supplemental brief Motor City has called to our attention a recent case from the Court of Custom and Patent Appeals, *Norton* v. *Curtiss,* 433 F.2d 779, which considered the defense of fraud in the context of a priority determination. The *Norton* case considered fraud of two types: (1) technical fraud which is actionable in itself, and (2) an unclean hands defense based on inequitable conduct.

Clearly there is no technical fraud in the present case. We already have held that the claim in question is valid in spite of the allegedly withheld prior art.

The record convinces us that they lacked the "scienter" or fraudulent intent that is an integral part of the defense of fraud. When they applied for their patent, applicants were concerned with their discovery regarding the beneficial effect of aeration. There is nothing in the record to evidence that they thought that the prior art 30 per cent cyanate bath was pertinent, in a patentability sense, to their discovery. The record discloses to our satisfaction that the argument of applicants to the Examiner was made in good faith and there was no breach of the duty of candor before the Patent Office.

Patent Misuse

The primary business of Kolene is the sale of salts to make the cyanate bath and equipment for use in the "TUFFTRIDE" process. It sells to two different types of customers: (1) captive shops, and (2) heat treaters.

Captive shops are establishments such as Ford Motor Company and General Motors, which are only interested

in treating their own parts in an in-house operation. They accept no parts for treatment from outside sources and do not advertize their practice of the process either under a servicemark or otherwise. Kolene has an established and publically announced policy that any concern desiring to use its patented process in a captive shop operation is free to do so and that no license is needed for such activities. Kolene takes the position that the more people that use the process, the more it will make from the sale of salts and equipment. It says that it is a good supplier and relies on that effort to get business. About 98 per cent of Kolene's business comes from captive shops.

Heat treaters are independent businesses which offer as a service to anyone the treatment of parts pursuant to Kolene's process. All the heat treaters presently in operation are licensed under the registered servicemark "TUFFTRIDE" and as a consequence of their licenses they are required to purchase all salts used in the cyanate bath from Kolene. Although they do not have a license under the patent, Kolene has made no claim of patent infringement against these servicemark licensees.

Motor City contends that Kolene's patent is unenforceable on the theory that it has misused the patent by requiring heat treaters to purchase their salts from it. The District Court found as a fact that if any tie-in existed, it was between the servicemark "TUFFTRIDE" and the sale of salts, not the patent and the sale of salts. We hold that this finding is not clearly erroneous.

Motor City urges on appeal, however, that the patent and servicemark are so interrelated that, even accepting the finding of the District Court, there is still patent mis-

use. This theory presents a novel issue for which we can find no case directly on point.

The patent misuse defense is bottomed on public policy considerations. The defense is not a personal one in the sense that the misuse must be directed at the infringement suit defendant. This point was expressed by the Supreme Court in *Morton Salt Co.* v. *G. S. Suppiger Co.*, 314 U. S. 488, where, at 494, the Court said:

> "It is the adverse effect upon the public interest of a successful infringement suit, in conjunction with the patentee's course of conduct, which disqualifies him to maintain the suit, regardless of whether the particular defendant has suffered from the misuse of the patent."

However, as the Court had previously noted at page 493:

> "Undoubtedly 'equity does not demand that its suitors shall have led blameless lives,' *Loughran* v. *Loughran*, 292 U. S. 216, 229; cf. *Keystone Driller Co.* v. *Excavator Co.*, 290 U. S. 240, 241-45, but additional considerations must be taken into account where maintenance of the suit concerns the public interest as well as the private interests of suitors. Where the patent is used as a means of restraining competition with the patentee's sale of an unpatented product, the successful prosecution of an infringement suit even against one who is not a competitor in such sale is a powerful aid to the maintenance of the attempted monopoly of the unpatented article, and is thus a contributing factor in thwarting the public policy underlying the grant of the patent. Maintenance and enlargement of the attempted monopoly of the unpatented article are dependent

> to some extent upon persuading the public of the validity of the patent, which the infringement suit is intended to establish. Equity may rightly withhold its assistance from such a use of the patent by declining to entertain a suit for infringement, and should do so at least until it is made to appear that the improper practice has been abandoned and and that the consequences of the misuse of patent have been dissipated. Cf. *B. B. Chemical Co.* v. *Ellis, post*, p. 495."

We know of no authority suggesting that there can be a defense to a patent infringement suit based on "misuse in the air." See *Republic Molding Corp* v. *B. W. Photo Utilities*, 319 F.2d 347 (10th Cir.). The misuse must be of the patent in suit, *Binks Mfg. Co.* v. *Ransburg Electrocoating Corp.*, 281 F.2d 272 (7th Cir.), *cert. granted*, 364 U. S. 926, *writ dismissed*, 366 U.S. 211; *Apex Electrical Mfg. Co.* v. *Altorfer Bros. Co.*, 238 F.2d 867 (7th Cir.); *Sperry Products, Inc.* v. *Aluminum Co. of America*, 171 F.Supp. 901 (N. D. Ohio), *rev'd in part on other grounds*, 285 F.2d 911 (6th Cir.), *cert. denied*, 368 U.S. 890. An antitrust offense does not necessarily amount to misuse merely because it involves patented products or products which are the subject of a patented process. *Hazeltime Research, Inc.* v. *Automatic Radio Mfg. Co.*, 77 F.Supp. 493, 498 (D. Mass.), *aff'd*, 176 F.2d 799 (1st Cir.), *aff'd*, 339 U. S. 827.

As a limit on the misuse doctrine, it can be stated generally that the misconduct must be connected with the matter in litigation, and the defense is not available to a party with whom the misconduct is of no concern, *McCullough Tool Co.* v. *Well Surveys, Inc.*, 395 F.2d 230, 238 (10th Cir.), *cert. denied*, 393 U. S. 925.

Applying these principles to the instant case, we find that Motor City has no cause to complain of the alleged misconduct of Kolene. Motor City is not a party to the allegedly illegal contracts, and a realistic analysis does not show that the patent in suit "itself significantly contributes to the practice under attack." See, *Report of the Attorney General's Committee to Study the Antitrust Laws* 251 (1955). This realistic analysis includes considering the fact that 98 per cent of Kolene's business does not involved the alleged misconduct. Moreover, it is only when someone wants to use the process *in connection with Kolene's registered servicemark* (at which time Kolene's reputation goes on the line) that they are required to purchase salts from Kolene. The record shows that Kolene is willing to license its process to heat treaters without the allegedly illegal tie-in but only when the licensee refrains from use of Kolene's servicemark. This offer was made to Motor City in the present case. Neither the right to use the servicemark, *e.g., Switzer Bros., Inc.* v. *Locklin*, 297 F.2d 39 (7th Cir.), *cert. denied*, 369 U.S. 851, nor the sale of salts, *e.g., Susser* v. *Carvel Corp.*, 332 F.2d 505 (2d Cir.), *cert. granted* 379 U.S. 885, *cert. dismissed*, 381 U.S. 125, is tied to the right to practice the invention of the patent. Hence, the patent is not a lever used to extend a legal monopoly. *Cf. Ansul Co.* v. *Uniroyal, Inc.*, 306 F.Supp. 541 (S.D.N.Y.).

Affirmed and remanded.

No. 20,107

UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

KOLENE CORPORATION, AND DEUTSCH GOLD-UND-SILBER SCHEIDEANSTALT VORMALS ROESSLER,

Plaintiffs-Appellees,

v.

MOTOR CITY METAL TREATING, INC.,

Defendant-Appellant.

ORDER

Before PHILLIPS, Chief Judge, and PECK and BROOKS, Circuit Judges.

This cause is before the court upon defendant-appellant's petition for correction of the opinion, for a rehearing or a rehearing in banc, filed March 24, 1971, and plaintiffs-appellees' motion to strike the petition.

None of the judges of this court who are in regular active service having made a suggestion for a rehearing in banc, the petition for rehearing has been referred to the panel which originally heard the case.

This court having not intended in any way to reflect on appellant or its counsel personally, it is ORDERED that the petition for correction is granted to the extent that the word "piracy" in the fifteenth line of page eight of the slip opinion is deleted and the word "activity" substituted therefor. It is further ORDERED that in all other respects the petition for correction and for rehearing be and hereby is overruled. The motion of plaintiffs-appellees to strike likewise is overruled.

Entered by order of the Court.

/s/ CARL W. REUSS, Clerk

UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION

KOLENE CORPORATION

v.

Plaintiff,

MOTOR CITY METAL TREATING, INC.,

Defendant.

Civil Action
No. 25283

(Tr-26a)

OPINION
(Filed July 28, 1969)

Smith, District Judge

This case involves a process patent. The use of the process on certain metals, particularly ferrous, results in a tough and wear resistant surface, with greatly increased fatigue strength. Thus "Helicopter rotor blade dampers have service life tripled."[1] It has been described as a "new technology" and there is no doubt that the description is accurate. But this case has an unusual circumstance, new in our experience at least, of significance in some phases of the case. Although we have heard extensive oral testimony, have seen moving pictures, have examined many documents and depositions (the parties have prepared and tried the case with great care), have examined metallic pieces treated by the process, as well as much trade literature, we have yet to be told just how or why the process works as it does. The parties disagree and their experts disagree. We will examine this matter further in due course.

[1] Automotive Industries, May 14, 1962. Ex. 10

The parties before us are Plaintiff Kolene Corporation (hereafter Kolene), a Michigan corporation, doing business at 12890 Westwood Avenue, Detroit, Plaintiff Deutsche Gold-Und-Silber Scheideanstalt Vormals Roessler (hereafter referred to as Degussa, its trade name), a corporation of the Federal Republic of Germany with offices in Frankfurt-am-Main, West Germany, both collectively referred to hereafter as the plaintiff, and Defendant Motor City Metal Treating, Inc. (hereafter Motor City), a Michigan corporation doing business at 3400 Dunn Road, Detroit.

Involved here is Claim 1 of U.S. Patent No. 3,022,204, (Tr-27a)

issued February 20, 1962 on an application filed by Johannes Muller and Carl Albrecht. The patent is entitled "Process for Nitriding Metals." The plaintiffs claim that the defendant is guilty of infringement and seek an injunction and an accounting.

The defendant alleges that the patent-in-suit is invalid, due to obviousness, and moreover, that the patent is not infringed by the defendant's accused process. In addition, the defendant asserts that the patent in unenforceable and invalid because of alleged fraud on the Patent Office and misuse by the plaintiffs. Defendant also counter-claims for treble damages under the Federal Anti-Trust laws on the ground that the plaintiffs practiced a fraud on the Patent Office in securing the patent, such fraud arising from an alleged failure to advise the Patent Office of the best prior art and in making deliberate misrepresentations to the Patent Office. There is no issue as to jurisdiction of this Court, title to the patent-in-suit, or notice of infringement. There is no serious dispute that the defendant's principals and organizers had knowledge of the

patent-in-suit when defendant was organized in October of 1963, when the defendant began its alleged infringing activities and, actually, at an even earlier date, that is, when they were associated with another company, Commercial Steel Treating, prior to mid-1963, and shortly after the issuance of the patent in February of 1962.

Prior to the issuance of the patent-in-suit there was extensive metal-treating history relating to what is called "nitriding." This term, broadly speaking, refers to the casehardening of a piece of metal by the use of nitrogen.[2]

(Tr-28a)

The prior art background of the heat treating of metals begins with gas and liquid nitriding processes.[3] The use of these processes was restricted to certain of the ferrous alloys since they were not usable on all ferrous materials, such as cast iron. The gas and liquid processes were lengthy and expensive, the former (subjecting the piece to a high temperature nitrogen gas atmosphere) being used particularly for parts where high cost was not a factor, such as in selected governmental and aircraft operations. In the liquid nitriding processes (such as Chapmanizing, which involved heating in the range of 1550 to 1600° F, Malcomizing, Kaliding, and others) the part

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[2] "* * * a process of casehardening steel by impregnating with nitrogen * * *" Webster's Third New International Dictionary, 1961.

[3] Dr. Muller's article in Das Industrieblatt, Stuttgart, September, 1954, "Nitriding Steel in the Salt Bath" contains a descriptive comment, in referring to the use of ammonia as the nitriding agent, of the mechanism of the nitrogen penetration into steel. "The atomic nitrogen which is formed in this decomposition process is extremely reactive before it recombines to form a nitrogen molecule N_2,—it is able to penetrate the steel surface and to diffuse into the steel."

was immersed in a high temperature molten cyanide bath for prolonged periods of time.

To those skilled in the art the term nitriding was synonymous with marked disadvantages. It did, it is true, result in a wear-resistant surface on some ferrous metals but at the cost of brittleness, lengthy treatment, and high costs. In addition, there was the problem of distortion in the processing. Mr. Michael Soviak, the Chief Metallurgist at Commercial Steel Heating Corporation, testified by deposition and referred in part to the difficulties involved

(Tr-29a)

due to the high temperatures used. "* * * We had a tremendous problem with this thing, using carbo-nitriding and cyanide treatments of all kinds where we had to heat to a high temperature and quench. * * *" And at a later point, "One of the biggest headaches in our business is distortion. We carry a battery of straighteners that are expensive and their job is to straighten things that distort." In addition, of course, the original dimensions of the piece had to take into account the machining and grinding required to correct the distortion resulting from the process. Under these circumstances there was a real need for a commercially feasible, non-distorting process that would impart to ferrous materials both wear resistance and fatigue resistance and at the same time maintain ductility, thus avoiding brittleness. It should, as well, be economically feasible.

In approximately 1954 Dr. Johannes Muller, a Chemist and Metallurgist who was employed by plaintiff Degussa, developed a "soft" nitriding process which anteceded

the patented process we here consider. "Soft" nitriding[4] involved using a salt bath as the nitriding medium. The active ingredients were sodium cyanide or potassium cyanide or mixtures of both. Dr. Muller states (Ex. B) that the nitriding effect of sodium or potassium cyanide was the result, for example, of the oxidation of sodium cyanide to sodium cyanate. In the decomposition of the latter, nitrogen appeared to the nascent state and could pene-
(Tr-30a)
trate steel. There was thus obtained a thin, ductile, and tough "compound" layer formed of non-brittle, ductile iron-nitrides, beneath which layer a deeper nitrogen diffusion zone was found. The process was a relatively short one, requiring about 90 minutes, resulting in both increased wear and fatigue resistance, and without the sacrifice of ductility. Moreover, due to the operating temperature of approximately 1050° F. there was no significant distortion. These findings of Dr. Muller were reported in articles published in Germany, which articles form part of the prior art in this suit. We will refer to this process hereafter as the "non-aerated" process in order to distinguish it from the aerated process before us in the patent-in-suit.

Promising though it seemed in the laboratory, however, and in use on a small scale, it had one serious drawback. The results were not uniform. Commercially applied, the process was erratic to the degree that variations were not only found from batch to batch, but within parts in a single

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[4] The term arose, we are told, "because previous gas nitriding was brittle, and the opposite to brittleness was soft in the German language, I understand, so they called it 'soft nitriding'." It was a contradiction in terms in the metallurgical world since nitriding theretofore meant hardness and brittleness.

batch. Similar variations were found in both fatigue and wear resistance. Dr. Muller, himself spoke of the experience of Volkswagen, "they found one day 50 per cent [reference is here made to per cent of improvement in the fatigue properties]; another 70 per cent; another 20. So that describes the situation." As a result "They decided to not continue the tests or to introduce a process into the production or to approve it for production." Daimler-Benz stopped all test work after a certain while, * * * because of not reproducible results." In fact, Dr. Muller himself when asked whether he or his company ever used a non-aerated cyanide-cyanate bath in commercial processing answered, "I would say not really," and went on (Tr-31a)

to explain "bacause the results I got from this non-aerated bath were not consistent enough, so it was not possible to, let's say, enlarge the use in this field." When asked whether anyone used such a bath commercially in the commercial processing of work pieces, he replied that one company did (Braunschweig) but that "they threw it away after a certain while." This process, we find, was a commercial failure.

We now reach the gist of the patent. We have noted that the simple immersion of the metal in the chemicals, "soft" nitriding, although it resulted in the marked advantages described, was commercially unusable because of its fatal defects as to inconsistency and lack of uniformity. This was particularly harmful to its employment in large volume production. In 1959 one Carl Albrecht, collaborating with Dr. Muller, decided to experiment with the theretofore relatively quiescent bath by adding another step, namely, that of air-bubbling. Sub-surface air was intro-

duced into the vessel and allowed to bubble through the mixture. The results, for some reason, were not only uniformity, consistency, and large-volume reliability, but an increase in the favorable attributes (e.g. ductility) obtained from the commercially unsuccessful non-aerated salt bath. As we have noted heretofore, just why this is true no one seems to know. Counsel for both parties presented theories, as did various experts. Plaintiff's counsel thought if aeration oxidizes cyanide (as usually contended) it does so by forming a nascent cyanate in situ. This, of course, would be in addition to the already present cyanate. Dr. Muller, the patentee, theorized that when aeration forms a nascent cyanate in situ, the bath in effect contains (Tr-32a)

two forms of cyanate, a normal cyanate and an iso-cyanate. But Dr. Muller does not tell us why this reaction caused both qualitative improvement and uniformity of results. Expert witness Kates, the Director of Metallurgy for the Lindberg Steel Treating Company, admitted that "* * * I don't know the cause of the chemical thermodynamics involved but there is—the addition of air creates a catalytic effect to allow for the greater diffusion of the nitride that is formed." (Whenever an expert speaks of some sort of "catalytic" action it is merely another way of saying that an unknown factor is at work.) Expert witness Arne Mars, employed by Vickers, Inc., a division of Sperry-Rand, as Manager, Metallurgy Research and Development (this company, we note, not only has manufacturing plants within the United States but plants in Australia, Japan, Germany, England, and under construction in India and Brazil), in response to the question "Do you feel that the air oxidizes cyanide to cyanate?", "I don't know for

sure exactly if it does do that in a replenishing type of reaction which you are talking about, but there are chemical reactions that are going on, and exactly what happens, I really don't know."

From the testimony presented in Court and a review of the depositions, articles, and exhibits, the Court is satisfied that although no one can tell us precisely in what manner aeration operates to produce consistent and uniform results, together with a substantial qualitative improvement, it does do so. It is clear that when the air supply is shut off, either by mishap or deliberately, the process no longer works in the sense that it no longer produces uniform, consistent, and acceptable results. Again referring to the testimony of Mr. Mars of Vickers: "We've had some problems with no aeration. For instance, when

(Tr-33a)

our sparking ring [which introduces the air] would plug up or something and we had a lot of problems, parts were scrapped." He goes on "And without the air we just didn't get the compound layer on there." Referring to the effect of aeration, Mr. Mars referred to some tests that they had run: "This is something that we previously had done in our R and D type work, just to run a bath without air to see what happens, so when we run into a production problem we can recognize it." Question: "And you found then that without the air it did not work?" Answer: "That's right."

It is our judgment that aeration (meaning, in this context, subsurface air introduction) is the gist of the invented process before us. It is well to stress at this point that the accused patent-in-suit, is a "Process for Nitriding Metals" and that what has been patented is a process

or art. The important thing is a method of procedure, not the particular means by which the method is practiced, *Expanded Metal Co.* v. *Bradford* 214 U. S. 366 (1909) or the apparatus used in carrying it out.

So far we have emphasized the operations of Degussa and the work of the chemical experts. The way Kolene got into this matter is this: Its business is the chemical process business. The company sells the equipment and salts used in various industrial molten salt bath processes. These include descaling stainless steels, exotic metals and alloys, degraphatizing and desanding cast iron, the stripping of paints and plastics from industrial components. It deals with nearly all of the major industrial plants in the United States as well as plants overseas.

In 1958 John H. Shoemaker, the President of Kolene, (Tr-34a)

visited Degussa, which was one of its licensees in Frankfurt, Germany. At that time he was told of the then new (and later unsuccessful) "soft" nitriding process which had been developed at Degussa. The test specimens shown him were from the earlier "soft" nitriding process which did not involve the bubbling of air through the mixture. When Mr. Shoemaker returned to this country he endeavored to sell the process in the United States but was received with much skepticism and some ridicule because the term "soft" nitriding was contrary to the then accepted understanding of metallurgists that nitriding produced hardness, not softness. There was little interest shown in the process.

In the summer of 1959, however, Mr. Shoemaker re-

turned to Germany with Mr. George Bidigare. Mr. Shoemaker, who was not himself a metallurgist, desired the advice and the evaluation of an expert in the field and hence made an arrangement with Mr. Miel, at that time the President of Commercial Steel Treating of Detroit, to take with him Mr. George Bidigare, who was a highly skilled, experienced metallurgist in Commercial's employ. After some reluctance, Degussa agreed to disclose its process to Mr. Bidigare upon Mr. Shoemaker's representations that he required Mr. Bidigare's technical advice, and the process was disclosed to both gentlemen in confidence. They spent some three weeks with Degussa receiving information and dictating detailed reports, for by this time Degussa had the aerated process, it having been conceived and introduced at Degussa in February of 1959. This was the first time Mr. Bidigare had ever seen or heard of such a process and it was his opinion that the process was new and different from anything he had known before. It was at this time, during the 1959 visit to De-

(Tr-35a)

gussa, that Mr. Shoemaker coined the tradename "Tufftride." A new and more descriptive name was sought because of the resistence that metallurgists in the United States had exhibited to the term "soft" nitriding. The trade name refers only to aerated processes and has been used commercially by Kolene only to describe such process. The Court does not view the appearance of this word, from time to time in memoranda and files, and its use by translators in translating documents from German to English, to refer to the earlier non-aerated "soft" nitriding process

as significant. We find that the trademark "Tufftride" was coined and formulated by Mr. Shoemaker, was intended to refer only to the aerated process (and not the the earlier unsuccessful non-aerated process) and does commercially refer only to such aerated process which was introduced to the United States by Mr. Shoemaker. Incidentally, it is clear that the non-aerated process was never introduced into the United States. (Where the word "Tenifer" is found, it may be recognized as the trademark used in Germany by Degussa for the successful aerated high-cyanate process.)

The process-in-suit was introduced into the United States in 1959 and has been widely adopted and widely used. This, however, took considerable time and effort on the part of plaintiff Kolene and its various franchisees since as we have heretofore noted, the term "soft-nitriding" was contrary to the normal knowledge of the art and the understanding of experts in the field respecting the effect of nitriding on ferrous metals. The skepticism, however, and resistance, were overcome by the use of the process. International Harvester, for example, had been experiencing

(Tr-36a)

difficulty with its crankshafts which were breaking after being used from 100 to 150 hours. They tried this tech nique as the last straw, and found that "After the Tufftriding process, we ran 5000 hours." The process has now been adopted by many major industries in the United States and in foreign countries. Trade publications speaking favorably of the process are numerous and will be found in Exhibit 10. Some quotations therefrom will be found

in the footnotes.[5] The materials from the publications are (Tr-37a)

so voluminous that we will simply say that the record is replete with instances where the lives of all types of industrial parts such as dies, intricate stampings, automotive and engine parts, gears, as well as other pieces, have been substantially increased, and substantially improved by treatment with the process-in-suit.

The invention disclosed in the patent-in-suit, in more detail, relates to the process of aerating a cyanide-cyanate salt bath for the treating of metal parts. The application

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[5] Ex. 10, Tab 7, Tool & Manufacturing Engineer, April, 1964:

"Many parts now made of more expensive alloy steel can be made of low carbon steel and then processed to achieve desired level of engineering properties."

(p. 3) "In addition, the use of the process occasionally offers the only acceptable engineering solution to a part's performance problem."

Ex. 10, Tab 9, Machinery, March, 1965:

"An economical nitriding treatment eliminates spalling and decreases soldering of die casting dies."

"Greatly improved operation of die casting dies has been observed by nitriding them with a low temperature, short-cycle process called Tufftriding."

Ex. 10, Tab 10, Hot Rod, March, 1965:

(p. 32) "The forged steel crank, having undergone the Tufftride process, is one of the Chevy bottom end highlights." (Referring to new Chevrolet engine).

Ex. 10, Tab 11, Iron Age, July 5, 1962:

Describing an automated TUFFTRIDE system set up to treat crankshafts:

"Why did they automate Tufftriding? An unusual crankshaft design was needed for the new Willys Motors heavy duty Toronado-OHC engine. Willys wanted a tough crankshaft with the right proportions and finish to assure good bearing life."

"This made possible a lighter and simpler shaft. It also gave high mechanical efficiency to the heat treated parts."

"Machined from SAE 1045 steel forgings, the crankshafts promise higher reliability at lower costs."

was filed on March 20, 1961[6] and patent issued in 1962. Messrs Miel and Bidigare, both with defendant Motor City, thereupon sought the advice of counsel upon how best to avoid the patent. Their background and interest was this: Mr. Miel was President of Commercial Steel Treating Corporation until 1963 and thereafter became one of the organizers and the controlling stockholder of defendant Motor City. In 1959 Mr. Miel and Commercial had cooperated with Kolene in introducing the Tufftride process into the United States, afterwards splitting from Kolene. After 1963 (after Mr. Miel had left) Commercial became a franchisee. Mr. Bidigare, whom we have mentioned heretofore, also left Commercial in 1963 and was also one of the organizers of Motor City, serving as its President until 1964.

(Tr-38a)

As we have noted, after learning of the process with Mr. Shoemaker at the Degussa plant, Mr. Bidigare had set up and operated at Commercial a Tufftride installation. Afterwards, in 1960, the split between Commercial and Kolene took place. Miel and Commercial, however, continued to use the aerated process. They assert that they are using a different process, which brings us to the matter of infringement.

As to the desired avoidance of the patent-in-suit, Messrs Miel and Bidigare made certain changes in the process and equipment used therewith. Since the patent claims specified that the process employed "between about 25 and 40% cyanate" they decided to use 50%. This introduced no functional change in the process, but was de-

[6] This was based on earlier patent applications U.S. Serial No. 17,541 filed March 25, 1960 and U.S. Serial No. 40,555 filed July 5, 1960.

scribed by Mr. Grafmiller, a graduate metallurgist, formerly with Commercial, later one of the organizers and President of Motor City, in these terms:

> "Q: Do you know of any difference whatever in the functioning of a bath that has a cyanate content of 50 or more as contrasted with a bath which has a cyanate content of 25 to 40?
>
> A: Again, I have not been in this long enough to say yes or no to that. But to my knowledge it doesn't make any difference.
>
> Q: It is simply a question of avoiding the patent?
>
> A: Right."

Mr. Miel was somewhat more guarded. Avoidance of the patent was only part of the reason for going to a 50% cyanate level. The only other changes made were equally non-functional, namely, the use of an L-shaped tube (in-

(Tr-39a)

stead of a ring) to introduce the air into the bath, and (about the same time) using a titanium liner for the bath. (Stainless steel has also been employed for liners.) But it is noteworthy that the process of aeration, which was the key distinguishing feature between the old commercially unsuccessful German process, and the present successful one under the Muller-Albrecht patent, was not disturbed.

The claims-in-suit for the process were in part,

> "A process comprising immersing a metal workpiece in a molten alkali metal salt bath comprising between *about 25 to 40% cyanate*, at least about 40% cyanide * * * " Col. 8, lines 48-50, Patent-in-suit.

Our underlined words indicate the core of the controversy. The defendant claims that it uses between 48 to

50% cyanate and thus does not infringe. The first question that arises concerns the reasons for defendant's increase in cyanate. It sometimes happens in chemical processes that at a certain point in the reaction, a marked or significant change takes place. The reactions may stabilize on a certain plateau, that is, at a certain level. Or, having theretofore maintained a certain level, they may with changed conditions or concentrations, show a rise, or possibly a decrease, in intensity. Nothing of the sort occurs here. The "about 40%" is not critical from an operating point of view. Nothing happens at this point. It is clear from the testimony that this "about" 40% figure had its origin in the fact that the salts were eating up (reacting with) the then-available iron pots, producing a sludge. Its removal was difficult and laborious, since it was a shovel operation with highly poisonous chemicals, (the lethal ef-
(Tr 40a)
fect of the cyanides is well known) heated up to over a thousand degrees Fahrenheit. The "about 40%" was not a critical limitation of the inventive concept. At about 40% the effects upon the pot were so marked as to be incompatible with an economical and efficient commercial operation. As a matter of law, the term "about" is a clear warning that exactitude is not claimed but rather a contemplated variation. Thus the words "between about 25 to 40%" of claim 1 described limits ranging from a chemically operative lower limit (the 25% figure, as shown from the charts and testimony, is approximately where the effects of the bath begin consistently to increase) to a commercially imposed (for economic reasons) upper limit. It was the then best known method for operating the process.

While we are on this topic of operating the process, it

would be well to keep in mind that what we are concerned with here is a process invention. It includes certain acts or steps in combination, simultaneously acting on the salt bath and the metal pieces therein, namely, immersing the workpiece in the described liquid solution, and next, aerating the whole mixture, workpieces and all, by bubbling air upwardly through the mixture from below. The specific details of the appartus are of little or no significance or relevance. The pot is not the claim, but merely the vessel in which it all takes place. Nor is the pipe introducing the air the claim, whether a ring with holes in it, or an L-shaped pipe or what not. What we are concerned with here is a patent claim for a process as a whole and so we consider it. See, *Minnesota Mining* v. *Kent Industries*, 409 F.2d 99 (CA 6 1969).

(Tr-41a)

Except for the asserted difference in the cyanate content to 48-50%, the process used by Motor City is substantially the same as that taught by Degussa to Mr. Bidigare. Both Mr. Bidigare and Mr. Grafmiller testified that (in comparing the process when operated at 40% cyanate with that employing 50% cyanate) the purpose of the process was the same, the operations were the same, the results the same, and, more revealing, Motor City's customers were advised that the results of the Tufftride process and defendant's accused process were essentially the same. "Equivalent to or superior to" were Mr. Bidigare's words to Chevrolet and to the trade in general. In fact, orders from General Motors, Chevrolet Division, and from Fire-

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[7] E.g., Purchase Order, 2-22-65, Firestone to Motor City Metal Treating Corporation, "Services to *Tufftride* Chevrolet Flexplate Part #RA 26821-2" [Emphasis the Court's]

stone Steel, Division of Firestone Tire and Rubber,' to Motor City, specifying Tufftriding were received in evidence as bearing on the point that customers treated the accused process as the full equivalent of the Tufftride process and that Motor City was "riding along" (counsel's expression) on the trademark "Tufftride." So far as equivalence is concerned, the defendant is hardly in a position to deny it since it is clear that they have traded on the Tufftride name and reputation in soliciting business for its accused process.

The defendant's position respecting non-infringement rests upon the literal difference, if any, between the 48 to 50% cyanate allegedly used by the defendant and the words of the claims-in-suit "between about 25 to 40% cyanate." Shortly stated defendant says that a "between about 25

(Tr-42a)

to 40%" cyanate does not "literally read" upon 40 to 50% cyanate and therefore there is no infringement. But the difference is colorable, merely. There is no substantial or material difference. There is in fact literal readability, if proper weight is given to the qualifying word "about." Moreover the accused process is the full equivalent of the process defined in Claim 1 under the doctrine of equivalents, *Graver* v. *Linde*, 339 U. S. 605 (1950).

But defendant asserts that plaintiffs are estopped by a so-called File Wrapper Estoppel from construing the words "between about 25 to 40%" cyanate to include defendant's 48 to 50% cyanate. We will consider the entire File Wrapper disclosures and reliances at this point as they bear upon the several aspects of the case.

The original claims 1 and 2 in Patent Application U. S. Serial No. 17,541, filed March 25, 1960, described only the

concept of bubbling air through the mix, that is, aeration and nothing more. "According to the invention it was unexpectedly found that the nitriding action of such baths could be materially improved by passing finely divided air or other similar oxidizing gases therethrough * * * ."[8]

These clams were rejected on the grounds (see pp. 18 and 19 of the bundle) that the specifications did not indicate how the formula for the amount of oxidizing gas was derived, and that nitriding by nitrogen was the equivalent of what applicant was accomplishing by oxidizing, and that a British patent showed the "bubbling of the nitrogen containing gas" into a salt bath for nitriding. But it is (Tr-43a)

significant, at this point, to note that the Examiner did not reject on the basis that the prior art showed a process over which applicant distinguished solely on the matter of the maximum level of cyanate, which is the bone of contention at this point. Had he done so, a substantial question might arise, but such was not the case.

The insertion of the phrase "between about 25% and 40%" which later came into the case was hence not dictated in attempting to distinguish over any earlier aerated cyanide-cyanate process but was inserted because substituted attorneys[9] felt that it was improper under United States patent practice not to clearly define an operative process, stating an operative range, rather than merely describing the naked concept of adding aeration to some (or any) cyanide-cyanate baths. As we have seen, there was an approximate lower limit, for chemical reasons, of 25% cyan-

[8] Page 2, Application 17,541

[9] There is some argument whether the original attorneys were German attorneys or American but we do not find it particularly helpful to resolve the issue.

ate, and an approximate upper limit, for commercial reasons, of 40% cyanate. Thus, there was no giving up of any operative claim and the substitution therefor of another. No prior art required the cancellation of such claims, since no prior art cited by the Examiner (or, in fact, by the defendant here) included aeration in combination with cyanide and high cyanate. The Court, therefore, concludes and finds that the cancellation of the original, non-operative, no-range claims, when viewed in context, was not caused by a need to avoid any area of prior art which plaintiff (Tr-44a)

here seeks to recapture, but rather was a surrender only of inoperative naked claims, monopolizing every level of cyanate content, from the excessively low to the excessively high. Plaintiff is not here asking the Court to add an unclaimed element, which was once claimed and then abandoned in order to save the claim from invalidity due to the prior art,[10] or to drop from the claim some limitation originally added to distinguish the claim from the prior art cited by the Patent Office. There is, we find, no surrender or estoppel barring plaintiff from asserting infringement against cyanate percentages over 40%. This "surrender" point is the first of defendant's two theories of file-wrapper estoppel.

But defendant also argues that plaintiff's file wrapper statements, which allegedly argue that 25-40% is a critical level of the cyanate content of the process bar plaintiff from bringing infringement against the same process when operated over 40% cyanate. The defendant urges to us that while plaintiffs knew that the cyanate content was not critical to the operation of the process, they repeatedly

[10] See, *Kaiser* v. *McLouth*, 400 F2d 36 (CA 6 1968)

took the position before the Examiner that the cyanate range was critical.

This is an area calling for the greatest care in the interpretation of single sentences isolated from not only what preceded and followed the text, but from the case as a whole. We have seen heretofore that approximate ranges of operation with cyanate were imposed by a) the chemistry of the process (this is at about 25% cyanate) and b) the commercialization of the process (this was about 40%, due to the then-existing sludge problem.) To (Tr-45a)
this extent there is a critical range, "between about 25-40%." But (and we are looking particularly at the higher level, because this is where defendant operates) there is nothing whatever in the file wrapper, or the evidence before us to support a conclusion that the upper limit was critical to one exact percentage. "About 40" was good enough. This reflected merely the then operating experience. Whether 48, where defendant allegedly operates (48-50), was equivalent to 40 is nowhere negated by the file wrapper. Actually, that question is determined by the functioning of the process with the available impedimenta. Speaking of functioning, it is significant that defendant has failed to show that the functioning of the process at 48 is any different from that at 40, and we have heretofore commented that no performance or reaction curve presented to us shows any significant break at 40. We will not prolong this opinion with excerpts and testimonial references to the file wrapper[11] but we are satisfied that the plaintiff did not critically limit itself to a maximum of 40% during Patent Office proceedings.

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[11] This is Exhibit O. See, also, patent-in-suit, Ex. 1, col. 2, lines 39-40.

It is our conclusion as to infringement that the accused process is identical in all material respects to the process defined in Claim 1, the slight increase in the cyanate employed by defendant being immaterial. The accused process performs an identical function, and is identical in purpose and operation. Its results, as well, are substantially identical. Moreover, so far as equivalence may be involved, we find specifically that the accused process is the full (Tr-46a)

equivalent of the process defined in Claim 2 in all material respects, and is an infringement thereof.

We turn next to the defense of obviousness, novelty having been admitted. In this area our first inquiry must be as to the scope and content of the prior art. The best and most obvious prior art, of course, was the German nonaerated cyanide—high cyanate process we have heretofore discussed, along with the Volkswagen and other experience. Despite its initial high promise, it was unsuccessful. This earlier process was clearly presented to and considered by the Patent Office Examiner. Thus we find on the very first page of the patent application file wrapper that "The nitriding of steel workpiece by treatment in a fused salt bath containing alkali metal cyanide and alkali metal cyanate at temperatures between 500-600° C already is well known." Other comparisons are found between the earlier nonaerated process and the aerated process-in-suit, with the result of the Examiner's finding that the aerated process was patentable. Other prior art (note the Webster Dictionary definition found in footnote 2 hereto) were the old gas and liquid nitriding processes. None employed the gist of this invention, aeration. They were usable on only certain types of ferrous materials, not

all, they had pronounced disadvantages, and none provided a ductile (yet hard surfaced) workpiece. The process-in-suit considered contrary to the established knowledge of those skilled in the art, as to purposes, function, operations and results of the prior known nitriding processes. The essential difference was the addition of aeration. The results, at first received with skepticism, even by those skilled in the art, were as we have pointed out heretofore, subse- (Tr-47a)
quently referred to as "unheard of in the metallurgical field,"[12] and as "probably the biggest breakthrough in the heat treating field for several generations."[13]

Our ultimate question on this phase of the case is whether the addition of aeration (which is the essential difference between the claimed process and the prior art) was obvious to those skilled in the art. Persuasive in this regard is the established fact that the experts differ on just what sub-surface aeration does and why. It just happens, that's all. No prior art suggested adding aeration for uniformity of results and qualitative improvement over the earlier non-aerated bath. Such an unexplainable happening can hardly be said to be obvious to anyone.

Defendant argues that the principal result of aeration is merely to add cyanate (by oxidizing cyanide), thus replenishing used cyanate. But there is no proof of this, and it is significant to us that defendant, while maintaining its high level of cyanate by adding bricks of pure cyanate, nevertheless continues to employ aeration. The reason is clear. It is because without aeration the process is commercially useless. We find, on the record before us, that

[12] Metallurgist Soviak, Commercial Steel Treating Corporation. Tr. 626

[13] Metallurgist Mars, Vickers Corporation. Tr. 645

aeration does more than merely to add cyanate, but just exactly what it does we have not been told and cannot say. Our conclusion, based upon the criteria set forth in *Graham* v. *John-Deere*, 383 U. S. 1 (1966) is that the defendant has not maintained its burden of proof as to (Tr-48a)

obviousness. The Court, rather, finds that the process defined by Claim 1 was not obvious to those skilled in the art at the time the invention was made.

Defendant also contends that a fraud was practiced on the Patent Office. Defendant offered no proofs on this serious charge save introducing the File Wrapper into evidence. In the *Pfizer* case[14], upon which defendant heavily relies, the Patent Office Examiner was called and testified that he was in truth misled by the concealment of evidence which he had requested and which evidence was available and known to the patentee. Of course, this is not the only way, as defendant properly argues, of proving such fraud but in a case of this magnitude on an issue so important, involving, as it does, the penalties involved in anti-trust violations, we would desire something more decisive than the dry contents of the Wrapper. However, we will work with what we have.

Briefly, the patent application followed a not unusual path in the Patent Office.[15] There was an initial rejection of claims based upon a British patent[16] and an earlier Muller Patent.[17] Applicant's response contrasted the claimed process with both of these references. The material and significant ones of the rejected claims were replaced by

[14] *Chas. Pfizer* v. *Federal Trade Commission*, 401 F2d 574 (CA 6, 1968)
[15] See Ex. O, Patent Application
[16] No. 591,793, August 28, 1947
[17] No. 2,927,875, March 8, 1960

(Tr-49a)

Claim 12, renumbered as Claim 1-in-suit. Such claim was directed to a process employing (a) cyanide (b) high cyanate and (c) aeration, together with other specifications. This claim (with others) was ultimately accepted by the Patent Office and the patent-in-suit issued.

The gist of the fraud charge is the allegation, repeated with many variations, that the Examiner "did not have before him the best prior art, 'soft nitriding'." We find, on the contrary, and beyond reasonable contradiction, that the Examiner was fully informed thereof, that the applicants acknowledged the old unsuccessful German process as part of the prior art, but urged that its aeration in a cyanide-high cyanate bath was the distinctive and novel element of the process claimed. Thus on pages 1 and 2 of the Patent Application, No. 17,541, Ex. O, after referring to the older, well-known nitriding by treatment in a fused salt bath, it was stated that "It was found, however, that the nitriding action of such baths is not always uniform and that quite often defective results were obtained," and, continuing:

> "According to the invention it was unexpectedly found that the *nitriding action of* such baths could be materially improved by *passing finely divided air* or other similar oxidizing gases therethrough and that when this measure is taken the nitriding action of the baths is no longer dependent upon the depth of the baths.
>
> "The beneficial effect achieved by introduction of finely divided air into the fused salt bath is, for example, exemplified in that a fused salt bath 60 cm in diameter * * * " [p. 2, Italics the Court's]

Later (p. 80) it is also pointed out that
(Tr-50a)

> "The *aeration of the fused salt bath* during the nitriding operation to a certain extent controls the nitriding action obtained. In general for reasons of economy the nitriding action is increased to its highest possible value." [p. 8, Italics the Court's]
>
> * * *
>
> "The air or oxidizing gas is introduced into the bottom of the fused salt bath in such a way that it is finely distributed in the form of small bubbles which rise up through the molten bath." [p. 8]

We note also (pp. 13-16, Application) that the process claims as filed specified aeration as an essential element.

The curves in the File Wrapper (p. 28) labelled as "unaerated" and "aerated," graphically demonstrate the differences between the old unsuccessful process and the new one. "The differences between treatments of the same metal under the same conditions and in the same bath is even more pronounced when the bath has been *aerated* during the treatment of the metal as compared to the *same bath in which no air was added.*" (p. 27) [Emphasis the Court's]

The record is replete with further instances of notifications, together with comparisons. We find that, starting with the first page of the application, and continuing throughout, there were ample references to alert the Examiner to the old process. The law in this area seems
(Tr-51a)
clear. Where an applicant deliberately and intentionally, rather than unintentionally or mistaknely, suppresses material evidence or gives the Examiner false and mislead-

ing evidence, which betray him into granting a patent that he might not otherwise have granted, the patent is not only unenforceable, but the fraud so practiced might ground an anti-trust claim, should the other elements of an anti-trust violation be proven. *Walker* v. *F. M. C.*, 382 U. S. 172 (1965).

Further chares of fraud are levelled with respect to technical papers and brochures, test samples and test reports describing the results obtained by the use of the old German non-aerated process, and an affidavit by Mr. Shoemaker, President of Kolene, all of which are found in the file wrapper. It is said that these were fraudulent misrepresentations to the Patent Office since those representations involved in the charge related to the old German process. It is true that much of the soft nitriding data obtained from the older, one-step process was used but it was equally applicable to the new aerated process-in-claim. As we have pointed out heretofore, the old process did indeed have marked advantages, combined with its disastrous disadvantages, and it was the claim of the applicants that the new bubbling process largely eliminated the disadvantages. The use of the old process data was completely proper (indeed, we would say, essential) provided only, and here is when the charges of fraud collapse, provided the Examiner was informed of the relation of the old process to the new. This he was, as we have shown.

The burden of proof of fraud upon the Patent Office, whether relating to the defense of fraud or to the anti-trust counterclaim based on fraud is upon the defendant (Tr-52a)

and it has not been sustained. There is no showing that any statements to the Examiner by applicants were materi-

ally untrue or misleading, or that any representations had a tendency to (or did, in fact) mislead the Examiner into granting a patent which he would otherwise not have granted. Moreover, and most importantly, there is no showing of an intent deliberately to mislead the Examiner or that he was in fact misled. We find that defendant has failed to maintain its burden of proof as to the fraud alleged to have been practiced upon the Patent Office, whether treated as a defense or as defendant's anti-trust counter-claim.

We come now to the matter of the alleged "misuse" of the patent. Defendant argues that should we decide as to infringement or other issues in plaintiff's favor, nevertheless plaintiff cannot maintain any enforcement action against defendant because plaintiff has "misused" the patent.

The argument by defendants that Kolene has misused the patent comes to us with very skimpy proofs. We know very little about Kolene's quantitative use of the patents in the industry, this arising from defendant's disclaimer of any anti-trust violation, though it relies heavily upon anti-trust cases by way of analogy, should analogy there be. Much of defendant's "misuse" case rests squarely upon argument and speculation. Very few hard facts are presented. Analogies from the anti-trust field, as we have noted, are heavily relied upon, but it must be kept in mind that this is not an anti-trust case. If it were, it would fail, even under the *per se* doctrine, for there is no showing that a "not insubstantial amount of commerce" is affected. (Tr-53a)

Northern Pac. R. Co. v. *U.S.*, 356 U.S. 1 (1957). As to analogies it is well also to keep in mind that we are cited

to both patent and trademark cases, involving both the anti-trust laws and the *Morton Salt* doctrine of misuse. The permutations and combinations possible with two sets of rights involving two types of remedies, in various postures of association, without any discernible unifying thread of legal or economic principle, warns us to consider and to use the analogies with some caution. These observations are peculiarily relevant to the trademark (or patent) issue involving the franchised heat treaters, *infra*.

As will be later set forth in detail, Kolene does business with two types of shop, "captive" shops and heat-treater franchisees. With respect to each, defendant argues that there has been a "misuse" of the patent itself, relying, among other cases, on the *Morton Salt*[18] case. This case held that the holder of a patent on a salt depositing machine, who had licensed the patent for use only with salt purchased from him, could not maintain suit against the manufacturer of an infringing machine. "* * * [C]ourts, and especially courts of equity," it was held, "may appropriately withhold their aid where the patentee is using the right asserted contrary to the public interest." This proscription of denial of remedy is not, then, automatic. We are remitted to a consideration of "the public interest."

To view this matter in its proper setting upon the facts (Tr-54a)
before us it is necessary to review in somewhat more detail not only the relationship between the parties, but Kolene's method of doing business in this respect.

As we have previously noted, in the summer of 1959, with the permission of Lucas Miel, then President of Com-

[18] *Morton Salt* v. *Suppiger Co.*, 314 U.S. 488 (1941)

mercial, Mr. Bidigare went to Germany with Mr. Shoemaker as a technical adviser, to learn the process-in-suit from Degussa. It was taught to them in confidence upon assurance that it would not be used as against Degussa. It is clear that Mr. Bidigare had never, prior to that time, heard of the process. Upon returning to this country Mr. Bidigare set up and operated a Tufftride installation at Commercial, in a joint venture with Kolene, in which Kolene provided the salt free of charge to Commercial. During this period Mr. Bidigare and Mr. Shoemaker attempted to exploit the process and advertising literature was prepared. Thereafter, in 1960, Commercial and Kolene split up. The reason is not shown in the record. We gather that animosities existed between the parties.

Miel and Commercial, after the split up, continued to practice and promote the process but changed the trademark from "Tufftride" to "Nu-Nitride."

In 1962, when the patent-in-suit issued, Miel and Bidigare sought legal advise on how to avoid the patent, making, pursuant to such advice, what we have decided heretofore are slight changes in the salt concentrations and in the equipment. It is clear, however, that they did not give up aeration, which was the gist of the patent-in-suit.

Litigation between Commercial and Kolene regarding contractual agreements, breaches of confidence, patent in-
(Tr-55a)
fringement, and other issues thereafter took place, all of which issues were settled in 1963 after Miel, Bidigare and Grafmiller left Commercial. Thereafter, Commercial became a Tufftride franchisee. In the same year, 1963, Messrs Miel, Bidigare, Grafmiller, and other former Commercial employees formed the defendant, Motor City. At all times

Motor City has operated the accused process, with the exception of equipment (pot or liner) changes, substantially as it had at Commercial but under the name "Cynatride." To complete the picture we will merely note that there are certain off-shoots to the Commercial operation. Miel and Bidigare taught the process to Industrial Heat Treat of Charlotte, North Carolina, and licensed Industrial to practice the process under Commercial's trademark "Nu-Nitride." Industrial made duplicate copies of Kolene's advertising materials for Tufftride, changing only the word "Tuffride" to "Nu-Nitride." All of this was done without Kolene's permission or license but with Commercial's active assistance. During this same period, the Nu-Nitride process was licensed to a Canadian company controlled by Miel, the Preston Heat Treat Company, which shortened the trademark to "Nutride." It is noteworthy that Kolene has not sought injunctive or other relief against these processors so far as this record discloses.

We do not more fully explore the Commercial litigation since we were informed at the trial, by defendant's (Tr-56a)
counsel, that such litigation be viewed as lacking relevance to the issues under litigation.[19]
(Tr-57a

In addition to the Commercial litigation during the time

[19] *Tr. pp. 180-183:*

"MR. CULLEN: Excuse me. May I say something to the Court? The Court should understand to keep this testimony in proper perspective, that at the beginning the Kolene people and Mr. Miel and Bidigare of Commercial Steel Treating were working together in a joint effort. Subsequently, there was a falling out between Mr. Shoemaker, on the one hand, representing Kolene, and Mr. Miel, on the other hand, representing Commercial.

"As a result of that falling out, and subsequent to that falling out, Commercial Steel Treating Company, which was

then under the control of Mr. Miel, went its own way and practiced the process that they were practicing, and they now adopted the trademark "Nu-nitride," and they were continuing their operations without regard to any claim of right of Kolene.

"There was litigation between the Kolene people and between Commercial Steel Treating during the time that Mr. Miel controlled the operations of Commercial. Subsequently, the principal stockholders of Commercial Steel Treating Company had a falling out with Mr. Miel, and Mr. Miel left Commercial Steel Treating Company to form Motor City Company.

"Meanwhile, the stockholders of Commercial Steel Treating Company then returned back into operation with Kolene and became a licensee, and exclusive licensee for the Detroit area, except for Kolene's own operations under the Franchise system.

"Now, Mr. Miel and Bidigare, having left Commercial Steel Treating Company, formed Motor City Company, the present defendant, and continued in Motor City Company the same operations that they had previously performed in when they were in the employ of Commercial Steel Treating Company, and in the operations of Motor City Company, the same people, by the way, now call their process "Cyanatride."

"This explains the peculiar thing, that Commercial Steel Treating Company was at one time controlled or operated by Mr. Miel and later was not, and also the peculiar fact that at one time Commercial Steel Treating Company was in a joint venture with Kolene and then later had a falling out with Kolene, and then still later returned to use the Kolene trademark and the Kolene services and literature and publicity and sales effort as a franchisee of Kolene.

"THE COURT: That is the corporation itself and not the individual?

"MR. CULLEN: That's right.

"THE COURT: All right.

"MR. CANTOR: Perhaps I might shorten the questioning of the witness, since this witness was obviously intimately acquainted with those facts.

"Q (By Mr. Cantor) Is Mr. Cullen's statement correct, Mr. Shoemaker?

"A Correct, yes.

"Q Would you be willing to adopt that as your testimony as an answer to a question?

"A Yes.

"MR. CANTOR: Is there any objection to that?

"MR. ADELMAN: No. I only want to say I was hoping we could avoid getting into the issues *of that prior litigation, which I view as having no bearing on this lawsuit whatsoever.*" [Italics the Court's]

that Mr. Miel controlled Commercial, there was litigation between Kolene and Mr. John Sheppard, a retired metallurgist and chemicals salesman. Mr. Sheppard had furnished salts for the accused process to Commercial during the time it was operated by Mr. Miel, and thereafter furnished them to Motor City. Apparently as a part of the litigation with Commercial (prior to the departure in 1963 by Mr. Miel) or at about the same time, Kolene sued Sheppard for patent infringement, and later, convinced that he was not so infringing, dropped the suit. The defendant refers to Mr. Sheppard as a "manufacturer of salts." The description is hardly apt. Mr. Sheppard's ac-

(Tr-58a)

tivities with respect to the defendant's operation were described in some detail by Mr. Grafmiller, formerly of Commercial, later one of the organizers of defendant Motor City, its president, and general manager. He testified that the salts used by Motor City were "made there on our property," and that an employee of Motor City assisted Mr. Sheppard in his work, "after hours." Mr. Sheppard used Motor City's equipment and their space, on which he paid no rent. The record is utterly devoid of any testimony as to what would normally be called a bona fide manufacturer's plant operations, volume of business, equipment, number of employees, or otherwise. Actually, it would seem that what Mr. Sheppard did, first at the premises of Commercial and then Motor City, was to cast cyanate bricks for use in the process by Grafmiller. Mr. Sheppard's operations respecting the salts hardly rise to the dignity of being a "manufacturer thereof" as the term is normally used. We have gone into these suits in some detail, despite counsel's disclaimer, since they form

the basis of the charge, essential to the application of the misuse doctrine to the captive shops, that Kolene was "vigorously enforcing" it patent.

The argument by defendant that Kolene has misused its patent on the process requires a considerably detailed exposition of Kolene's methods of doing business with respect to the process-in-suit. Its business is that of selling salts and equipment used in chemical processes. With respect to the process-in-suit, Kolene sells equipment and salt to two classes of customers: a) the so-called "captive" shops, accounting for about 98% of the market, which are merely the heat-treating departments of corporations which process their own industrial parts; b) the so-called "heat

(Tr-59a)

treaters," independent operators, accounting for about 2% of the market, operating under franchises. This is a service type of business. These heat treaters process parts sent to them for treatment by their various customers.

With respect to the captive shops and the heat treaters using the process-in-suit, there is a different sales policy as to each, arising out of the differences in their methods of operation. The captive shops do their own work in their own shops and the responsibility for improperly treated parts is solely their own. Kolene sells equipment and salts to them upon purchase order. With them it has no agreements, contracts, or licenses. They are free to make purchases of their materials and equipment whereever they see fit, although as a practical matter they buy their salts and most of their equipment for the process from Kolene. These captive shops are also brought and kept abreast of technical improvements in the art through Kolene's technical help of various kinds.

The situation with respect to the "heat-treater" franchisees is substantially different. There are eleven heat treater licensees located in various parts of the United States, one of them Lindberg) having multi-plant operations in widely scattered places. Each of these franchisees is required to operate in accordance with Kolene's controls and procedures, and to buy all salts used in their "Tufftride" baths from Kolene. Each franchisee sells its Tufftride services under the trademark "Tufftride," relying (as do its customers) upon that trademark and its good will and reputation to sell to its industrial customers.

With respect to these franchisees, an outside company (Tr-60a)

sends its parts to a heat-treater to be "Tufftrided." Uniformity or consistency of treatment is an important factor. There may be substantial lapses of time between successive orders. There are widespread geographical separations between locations of either the same heat-treater, in its various branches, or between different heat-treaters. An example given the Court[20] was that of a customer who "has a plant in Peoria, * * * and a plant in York, Pennsylvania and a plant in San Dreando (sic), California, and he desires Tufftriding work done, that he could send to a licensee in California or into Pennsylvania or in Illinois and secure the same quality, the same product, the same process as he would get from any of the other licensees." International Harvester,[21] for example, sends the same crankshafts both to Commercial in Detroit and Lindberg in Melrose Park, Illinois. Moreover, not only the heat-treaters but their customers turn to Kolene for aid

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[20] Shoemaker, Tr. 316

[21] Ex. 5, Hall dep., pp 26-27

in the solution of problems which have arisen in the heat-treater shops. In addition, such shops must conform to an expected standard of work, as contrasted with the captive shop which, for its own work, may set its own standards, accepting or rejecting as it wishes. The franchisees pay a royalty to Kolene based upon their Tufftride business volumes. In addition, they are required to buy salts used in the trademarked "Tufftride" process, but not their equipment, from Kolene. Kolene argues that the salts must be of the same proven formulation, quality, and purity, the salts forming a major integral part of the (Tr-61a)

process. It is argued, as well, that merely setting specifications for salts obtainable from different sources will not achieve the coast-to-coast uniformity of treatment necessary for the product.

With respect to the captive shops, it is Kolene's position that their sales policy was to sell on the basis of being a good supplier, that it does not use patents as a sales weapon, that the business is the sale of salts and that it would not, nor has it ever, refused to sell salts to anyone. Defendant counters with the argument that the plantiff has used its patent "to coerce captive shops to purchase unpatented salts from the plaintiffs," relying upon such cases as *Leitch Mfg. Co.* v. *Barber Co.*, 302 U.S. 458 (1938); *B. B. Chemical Co.* v. *Ellis*, 314 U.S. 495 (1942); *Lincoln Electric Co.* v. *Linde Air Products Co.*, 179 F2d 223 (CA 6, 1949) and, of course, *Morton Salt Co.* v. *Suppiger Co.*, 314 U.S. 448 (1941). These are but a few of a host of cases all involving the same principles, all of which are based expressly or impliedly upon the element of coercion. See, *Rocform Corp. v. Acitelli-tandard Concrete Wall, Inc.*,

367 F2d 678 (CA 6, 1966). A fair summarization of these cases would seem to be that the courts require for application of the doctrine, a showing that while the patentee was permitting the use of the patent to his own customers, he was, as a practical and substantial concomitant, denying the use of it to others, by suit, threat, or otherwise. It is noted, for example, in our earlier Sixth Circuit case *(Lincoln Electric, supra)* that the patentee was vigorously enforcing its patent rights under the patent claims against sellers of the unpatented elements.

It is just at this point that defendant fails in his evi- (Tr-62a)
dentiary shewings. Although it asserts "vigorous enforcement" by Kolene, it turns out that the vigorous enforcement referred to are the old suits at the time of the breakup of Commercial and Kolene and nothing more, either against Nu-nitride, or other off-shoots of the Commercial operation. It urges vigorously that with respect to the captive shops (which do not employ the trademark Tufftride), the practice of Kolene is to force the use of the salts by lawsuits. "You have to have it [an implied patent license] or you go out of business because they sue everybody."[22] What defendant is asserting here is actually coercion. It is reminiscent of the statement of the Court in *Switzer Brothers, Inc.* v. *Locklin*, 297 F2d 39 (CA 7, 1961) that the patentee had threatened "all non-licensed manufacturers and all users of non-licensed devices with patent infringement suits" and had commenced suits "in widely scattered parts of the United tates against dealers, manufacturers, users, and customers," and the argument made in *Lincoln Electric, supra.* But defendant's argument in the case

[22] Tr. May 28, 1969, p. 16

before us founders on the record. There are before us no such suits. There is no evidence of threats of infringement, and no evidence of any kind that the captive shops or any franchisee have been pressured in any way by the existence of the patent-in-suit or its employment. The same situation obtains with respect to the words "Patent Pending" appearing on some drums shipped into the United States by Degussa. Defendant argues that the purpose of such words "is unlawful coercion." Mr. Shoemaker testified that the appearance of such words was either an over-
(Tr-63a)
sight or a mistake of fact by plaintiff relating to the pendency of relevant patent applications. At any rate no evidence was presented that anyone other than defendant's counsel was either aware of or interested in or disturbed by this language and we regard it as inconsequential.

In short, on this issue of coercion raised by the defendant, all that we have is counsel's charge and speculation, unsupported by evidentiary showings. Far more than this is required for the application of the Morton Salt doctrine, harsh as it is and involving forfeiture as it does, since its meaning is that a patentee cannot enforce his rights against deliberate infringement. No threats have been shown to us and no disgruntled user, or would-be user, has appeared before us. It is inconceivable to us that an entire industry could have been so intimidated. Upon the record we cannot find that the patent-in-issue has, in this suit, or any other, been held as a club over the salt users to bring them into line. It is our judgment, having heard and seen the witnesses presented, as well as other evidence, that the charge is without foundation.

The trademark tie-in, involving about 2% of the industry,

remains for consideration. The obectives of trademark protection were summarized in a Senate Report[23] on the Lanham Act[24] as follows:

a) "* * * [T]o protect the public so it may be confident that, in purchasing a product bearing a particular trademark which it favorably knows it will get the product which it asks for and wants to get.

b) "* * * [W]here the owner of a trademark has spent energy, time, and money in presenting to the (Tr-64a)
public the product he is protected in his investment from its misappropriation by pirates and cheats." [Paragraphing used is the court's]

It must be recognized that we have two opposing considerations at this point, each of which has powerful support. On the one hand we have the anti-competitive effects inherent in any tying arrangement. On the other hand we have a trademark licensor's efforts to preserve the good name and integrity of his product. As Mr. Justice Holmes observed in *Bourjois & Co.* v. *Katzel*, 260 U.S. 689, 692 (1923) a trademark "deals with a delicate matter that may be of great value but that easily is destroyed, and therefore should be protected with corresponding care," going on to say "[I]t stakes the reputation of the plaintiff upon the character of the goods." There are few cases in the field, none on all fours, and the literature is sparse and inconclusive.[25]

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[23] S. Rep. No. 1333, 79th Cong., 2d Sess. 1, 3 (1946)

[24] 60 State. 427 (1946), 15 U.S.C. §§1051-1127 (1958)

[25] See, Schniderman, Trade-Mark Licensing—A Saga of Fantasy and Fact, 14 Law and Contemp. Prob. 248, 259-268 (1949); Timberg, Trade-marks, Monopoly, and the Restraint of Competition, Id. 323.

The defendant relies heavily upon *Switzer Bros.* v. *Loch-lin,* 297 F2d 39 (CA 7, 1961). In this case the patentee sought the most extensive controls, since "The licenses required, as a condition for the grant thereof, that the licensee purchase all materials from Switzer, or sources approved in writing by it, *not only for the production of the patented devices, but also for the production of all daylight*

(Tr-65a)

fluorescent devices."[26] [Emphasis ours.] There is no such parallel here. Moreover, the case involved both patent and trademark tie-ins, the Court concluding that the appellants had misused both the patents involved and the trademark "in restraint of trade in interstate commerce in violation of the antitrust laws." There is no claim of an anti-trust violation made in our case. The case of *Susser* v. *Carvel Corp.*, 332 F2d 505 (CA 2, 1964) is more in point, although it also involved charges of violation of the anti-trust laws. There the Court divided, but both opinions held that a tying might be justified as necessary to protect a trademark. The majority held that a trademark tie-in, to be illegal, must meet the same tests applied in a patent tie-in situation, namely, both market dominance and the affecting of a substantial amount of commerce, the plaintiff failing there in establishing either element. The defendant here makes no effort at such a showing. Its argument is that the heat-treater franchises really involve a patent tie-in, not a trademark tie-in, and thus the franchises offend public policy, under the *Morton Salt* case, *supra.* Is the arrangement before us, then, a patent tie-in or is it a trademark tie-in? We pursue the same inquiry as did both the trial

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[26] 297 F2d 39, 44

and appellate courts in *Susser* v. *Carvel Corp., supra.*, in asking, What is the focus of the arrangement?

We turn to the franchise contracts themselves and examine that of the Getchell Steel Treating Company, Inc., a Minnesota corporation. The franchise, it states therein, concerns the "Tufftride" process. Granted are certain ex-
(Tr-666a)
clusive area rights, in which the licensee may "practice the Tufftride process and * * * use Tufftride apparatus and materials." Kolene agrees to furnish advertising materials, technical help and training, and to conduct inspections to assure "consistently high quality." The purpose of the latter provisions is to safeguard the quality on a nationwide basis for the benefit of customers relying on the Tufftride name, reputation, and trademark. The only reference to the patent (which had issued some three years previously) is in the first paragraph in which the "Metal Treater" agrees to honor all of Kolene's and Degussa's rights, "including all patents, issued or to be issued in the future ***."

Defendant does not demonstrate to us any focus on the patent itself by any direct evidence of record. Its argument rests on speculation and conjecture, as did its argument with respect to the "pressuring" of the captive shops, allegedly to force them either to buy Kolene salts or face suit "because they sue everybody." Defendant points to an amendment made in the licenses approximately a year after the patent grant, which amendment required the purchase of Kolene salts. As to this amendment, on the other hand, plaintiff submits exhibits (see Exs. W and Y) on the basis of which it argues that such requirement was imposed as a part of a review and recast of their method of doing business, including re-allocation of exclusive territorial rights (Ex. B to Ex. Y). Again, we are in the realm

of speculation. We cannot find the causal relation asserted by the defendant upon the evidence before us.

We construe this instrument not only within its four corners but with reference to the testimony of Mr. Shoemaker, who described in detail Kolene's method of doing (Tr-67a)
business. The focus here clearly is the trademark "Tufftride," the term coined by Mr. Shoemaker himself in an effort to avoid the disparagements which had been cast upon the words "soft nitriding," which had been employed at an early stage in the art. The trademark or service mark[27] Tufftride has become known on a nationwide basis and it is to the protection of such mark that the franchise agreement is principally devoted.

With respect to the widespread use of the trademark Tufftride and reliance thereon we have previously noted that the defendant itself receives (and processes) orders from Firestone and the Chevrolet Division of General Motors calling for the "Tufftride" process. Defendant informs its customers, we are told, that its process is not Tufftride but Cynatride "and its equivalent." Counsel continues "I admit that we're riding on the good will of the process insofar as it has good will, and we're entitled to do that in a competitive economy, absent a valid patent. That's what we're talking about here, is that patent valid?"

Moreover, it is significant to us, among other factors, that in the captive shops, which use the process-in-suit and comprise 98% of the market, but which is a non-trademark situation, there is no requirement that these large shops purchase their salts from Kolene. It is only with respect to the 2% remainder, scattered all over the country,

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[27] For the purposes of this case a distinction is unnecessary.

operating under the Tufftride trademark, a process requiring uniformity for industrial use, that the purchase of salt requirement is made. Since both segments of the mar-
(Tr-68a)
ket are using the patented process it is the more difficult to say that the control is based upon the patent rather than the trademark.

We find the focus of the franchises, then, to be upon the trademark Tufftride and, considering the need for nationwide dependability, reliability and uniformity of quality and purity of the salts used by those using the Tufftride trademark, the difficulties of supervision of operation nationwide as to salts from different sources, even though conforming to specifications and within commercial limits of purity, (available commercial grade cyanides have 2 - 4% unknown impurities) considering as well the lethal nature of these salts (i.e., cyanide) and the difficulties encountered in the efforts of Mr. Shoemaker to mix them, as well as the fact that this is a relatively new process, it is our judgment that under the unique circumstances of this case the salt purchase requirement by the heat-treater shops is not unreasonable.

The finding thus made is determinative of the case under defendant's theory. It concedes (Defendant's Supp. Brief, p. 2, submitted following oral argument on this phase of the case) that "if the focus of the franchise agreements were, in fact, the Tufftride mark, rather than the patent-in-suit, then defendant's charge of misuse would fail."

We will add that even without the concession, *Morton Salt* itself makes it clear that the doctrine there enunciated is not to be taken as dogmatic and its application automatic. Denial of remedy against an infringer is a harsh remedy, a species of forfeiture. And just as there is now found,

(Tr-69a)

in amelioration of the adamant application the per se rule[28] to tying contracts in anti-trust law, the doctrine of business justification,[29] so it would seem that the *Morton Salt* doctrine should admit of similar amelioration, even if this were indeed found to be a patent tie-in, in the light of *Morton's* requirement that the plaintiff must be using the right asserted "contrary to the public interest." In all of the welter of words and literally volumes of learned discussions in the area of anti-trust; per se violation, business justifications, and all the rest, we are impressed by the down-to-earth observations of the Fifth Circuit in the case of *Dennison Mattress Factory* v. *Spring Air Company*, 308 F2d 403, 408, in upholding a trademark agreement against assault under the anti-trust laws that

> "* * * the cases do point out that courts are prone to look at the primary purpose of a contract to determine its validity. If the primary purpose, however disguised, is to stifle competitors and create a monopoly, then the agreement or contract is struck down. However, the cases seem to follow the principle that if the primary purpose of the contract is lawful, e.g.,

(Tr-70a)

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[28] This term involves both a semantic and a procedural wilderness. Compare (as to "market dominance" alone) *Northern Pac. Ry.* v. *U.S.* 365 U.S. 1 (1958) with *Times-Picayune Publishing Co.* v. *U.S.*, 345 U.S. 594 (1953); compare also *United States* v. *Loew's, Inc.*, 371 U.S. 38 (1962) with *White Motor Co.* v. *U.S.*, 372 U.S. 253 (1963).

[29] See, Comment, 62 Mich. L.R. 1413, Tying Arrangements under the Anti-Trust Laws: The "Integrity of the Product" Defense; Note, 72 Yale L.J. 1171 (1963). See, also, *Baker* v. *Simmons Co.*, 307 F2d 458 (CA 1, 1962); *Dehydrating Process Co.* v. *A. O. Smith Corp.*, 292 F2d 653 (CA 1), *cert. den.* 368 U.S. 931 (1961); *U.S.* v. *Jerrold Electronics Corp.*, 187 F. Supp. 545 (E.D. Pa. 1960) aff'd per curiam 365 U.S. 567 (1961).

> to protect one in the fruits of his labor, and if the arrangement was actuated by or could be explained on the basis of legitimate business justification as opposed to the desire to increase market control through economic leverage, then the court will generally hold any incidental restraint of trade, not harmful to competition of the public, to be lawful. *Dehydrating Process Co.* v. *Smith* (CA 1, Cir. 1961) 292 F2d 653. Therefore, it is our duty to determine whether the general primary purpose of the contract under consideration was to protect Spring - Air in its product, and then determine more specifically whether the provisions of the contract complained of here violate any antitrust law."

Under the facts as we have found them and the law applicable thereto we need not consider plaintiff's offer to defendant, made in 1968 after suit was instituted, of a license giving defendant full freedom to practice the process without either controls or the salt-purchase requirement, conditioned, however, along with other requirements, that defendant take care to remove any belief or impression in the trade that it was franchised Tufftride heat treater Defendant urges this as an implied admission of guilt Plaintiff points to it as evidence of complete good faith. If we were compelled to make a choice we would, after seeing and hearing the witnesses, accept the good faith explanation. We find no misuse of the patent, either as to the captive or the franchised shops and we so hold.

It is our conclusion that Claim 1 of the patent-in-suit is valid and has been and is infringed by defendant and that plaintiffs are entitled to a judgment granting an injunction (Tr-71a)
against further infringement and an accounting awarding

damages as sought by the Complaint. A suitable order my be presented.

/s/ TALBOT SMITH
Talbot Smith
United States District Judge

Detroit, Michigan
July 28, 1969